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ENVIRONMENTAL ASSESSMENT

**PROPOSED OPERATION (LAUNCH AND
RECOVERY ELEMENT) OF MQ-1 PREDATOR
AND MQ-9 REAPER AIRCRAFT AT FORT
POLK, LOUISIANA AND FORT HOOD, TEXAS**

**TEXAS AIR NATIONAL GUARD,
ELLINGTON FIELD JOINT RESERVE BASE,
TEXAS**

ASSET MANAGEMENT DIVISION

NATIONAL GUARD BUREAU

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ACRONYMS AND ABBREVIATIONS

1	µg/m ³	Micrograms per Cubic Meter	65	IFR	Instrument Flight Rule
2	147 RW	147 th Reconnaissance Wing	66	IR	Instrument Flight Rule Military Training Routes
3	AAF	Army Air Field	67		
4	AAP	Army Alternate Procedures	68	IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
5	ACAM	Air Conformity Applicability Model	69		
6	ACHP	Advisory Council on Historic Preservation	70	IESI	Independent Environmental Services Incorporated
7	AFB	Air Force Base	71		
8	AFI	Air Force Instruction	72	JO	Joint Order
9	AGL	Above Ground Level	73	JRTC	Joint Readiness Training Center
10	AIRFA	American Indian Religious Freedom Act	74	KIAS	Knots Indicated Airspeed
11	ALS	Assault Landing Strip	75	KV	Kilovolts
12	ANG	Air National Guard	76	lbs/ft ²	Pounds per Square Foot
13	APZs	Accident Potential Zones	77	LDEQ	Louisiana Department of Environmental Quality
14	AQCR	Air Quality Control Region	78		
15	AR	Army Regulation	79	LEED	Leadership in Energy and Environmental Design
16	ARTCC	Air Route Traffic Control Center	80		
17	ASOG	Air Support Operations Group	81	L _{max}	Maximum sound levels
18	ATC	Air Traffic Control	82	LID	Low Impact Development
19	B.P.	Years Before Present	83	LRE	Launch and Recovery Element
20	BLORA	Belton Lake Outdoor Recreation Area	84	MCE	Mission Control Element
21	BMP	Best Management Practice	85	MHz	Megahertz
22	BRAC	Base Realignment and Closure	86	MS4	Small Municipal Separate Storm Sewer Systems
23	C&D	Construction and demolition	87		
24	CEQ	Council on Environmental Quality	88	MSDS	Material Safety Data Sheet
25	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	89	MSL	Mean Sea Level
26			90	MTR	Military Training Route
27	CFH	Cubic Feet per Hour	91	NAAQS	National Ambient Air Quality Standards
28	CFR	Code of Federal Regulations	92	NAGPRA	Native American Graves Protection and Repatriation Act
29	COA	Certificate of Authorization	93		
30	COC	Community of Comparison	94	NEI	National Emissions Inventory
31	CWA	Clean Water Act	95	NEPA	National Environmental Policy Act
32	CZs	Clear Zones	96	NGB	National Guard Bureau
33	dB	Decibel	97	NHPA	National Historic Preservation Act
34	DNL	Day-Night Average Sound Level	98	NOTAM	Notice to Airman
35	DoD	Department of Defense	99	NO _x	Nitrogen Oxides
36	DODI	Department of Defense Instruction	100	NPDES	National Pollutant Discharge Elimination System
37	DPW	Directorate of Public Works	101		
38	DRMO	Defense Reutilization and Marketing Office	102	NRHP	National Register of Historic Places
39	EA	Environmental Assessment	103	OSHA	Occupational Safety and Health Administration
40	EISA	Environmental Impact Analysis Process	104		
41	EIAP	Energy Independence and Security Act	105	PCBs	Polychlorinated Biphenyls
42	ELG	Effluent Limitations Guidelines	106	PM _{2.5}	Particulate Matter with a Diameter less than 2.5 Microns
43	ENRMD	Environmental and Natural Resources Management Division	107		
44			108	PM ₁₀	Particulate Matter with a Diameter less than 10 Microns
45	EO	Executive Order	109		
46	EPCRA	Emergency Planning and Community Right-to-Know Act	110	ppm	Parts per Million
47			111	PSSL	Primary Predator Satellite Link
48	ESA	Endangered Species Act of 1973	112	psi	Pounds per Square Inch
49	ESMP	Endangered Species Management Plan	113	PVC	Polyvinyl Chloride
50	FAA	Federal Aviation Administration	114	R&D	Research and Development
51	FL	Flight Level	115	RA	Restricted Areas
52	FHCRM	Fort Hood Cultural Resource Management Program	116	RCNM	Roadway Construction Noise Model
53			117	RCRA	Resource Conservation and Recovery Act
54	FY	Fiscal Year	118	RGAA	Robert Gray Army Airfield
55	GCS	Ground Control Station	119	ROI	Region of Influence
56	GDT	Ground Data Terminal	120	RPA	Remotely Piloted Aircraft
57	GHz	Gigahertz	121	SHPO	State Historic Preservation Office
58	HAP	High Accident Potential	122	SPCC	Spill Prevention, Control, and Countermeasure
59	HMMP	Hazardous Material Management Program	123		
60	HPC	Hazardous Properties Component	124	SR	Low Speed Altitude Routes
61	HVAC	Heating, Ventilation, and Air Conditioning	125	SUA	Special Use Airspace
62	Hz	Hertz	126	SWMP	Stormwater Management Plan
63	ICRMP	Integrated Cultural Resources Management Plan	127	SWPPP	Stormwater Pollution Prevention Plan
64			128		(continued on back cover)

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FINDING OF NO SIGNIFICANT IMPACT FOR PROPOSED OPERATION (LAUNCH AND RECOVERY ELEMENT) OF MQ-1 PREDATOR AND MQ-9 REAPER AIRCRAFT AT FORT POLK, LA AND FORT HOOD, TX TEXAS AIR NATIONAL GUARD (TXANG)

PURPOSE: The purpose of the Proposed Action is to provide Texas Air National Guard (TXANG) personnel with the training facilities and airspace necessary to effectively perform their Remotely Piloted Aircraft (RPA) mission. The Predator and Reaper provide real-time Intelligence, Surveillance, and Reconnaissance and combat support to troops stationed in combat areas overseas. RPA flight, maintenance, and training operations must be performed from a secure military installation and require access to controlled airspace that avoids populated areas. Because of the proximity to the heavily populated areas of Houston, and the lack of nearby restricted airspace, flight training requirements cannot be met at Ellington Field Joint Reserve Base (JRB). Therefore, there is a need to establish training operations at a nearby military installation (i.e., Fort Hood, Texas and Fort Polk, Louisiana) that can provide the required secure airspace and facilities.

Predator/Reaper training utilizes a concept called “Remote-Split Operations” that allows the aircraft to be launched and recovered by a small “Launch and Recovery Element” (LRE) and then handed-off to a “Mission Control Element” (MCE) for the rest of the flight. To support the LRE component of RPA training, the 147 RW requires additional facilities and training resources beyond those available at Ellington Field JRB, Texas. This EA will evaluate the potential impacts of LRE component training at Fort Hood, Texas and Fort Polk, Louisiana, which have been identified as suitable training locations.

If the Proposed Action is not implemented, TXANG combat operations will be degraded and personnel will be unable to fully implement their RPA mission.

PROPOSED ACTION: The TXANG proposes to implement MQ-1 Predator training at Fort Polk, Louisiana and MQ-9 Reaper LRE training at Fort Hood, Texas. The Proposed Action comprises the operational and infrastructure elements discussed below.

Operational Elements – The MQ-1 Predator aircraft would be transported via trucks to the installations and assembled and maintained there, with up to four aircraft located on the installations at any one time. Flying operations would be conducted during weekdays or on the weekends, as required. Operational altitude would vary between 5,000 and 30,000 feet above mean sea level. While in flight, the aircraft would use targets of opportunity, such as vehicles on ground, to evaluate system performance. There would be no live-fire missions at either

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1 installation. Standard aircraft weather minimums would apply during flight operations; missions
2 would avoid flying in rain, thunderstorms, ice, etc.

3 TXANG personnel would conduct minor maintenance of the aircraft while on-site, including
4 batteries and oil changes. The aircraft would be transported back to Ellington Field JRB for any
5 major maintenance requirements, such as engine overhauls. Approximately 8 to 15 TXANG
6 personnel would permanently relocate to Fort Hood, comprising a combination of active guard
7 and civilian personnel. On-base housing may be utilized, but off-base lodging would more likely
8 be used for these personnel. Due to its proximity to Ellington Field JRB, there would be no
9 personnel permanently relocated to Fort Polk. However, up to 15 TXANG personnel would
10 commute to Fort Hood and Fort Polk for two weeks per month to support training and
11 maintenance activities and to conduct proficiency training.

12 *Infrastructure Elements* – Fort Polk has suitable building space to store the MQ-1 aircraft. The
13 TXANG would utilize an existing hangar, Building 4265, to house the Predator aircraft and
14 supporting personnel. This facility would require only minor interior alterations to provide for
15 specific operations and administrative capabilities.

16 Fort Hood does not have an existing hangar that could be used to house the RPA mission.
17 Therefore, the TXANG would construct a new 17,500-square foot hangar to accommodate
18 training requirements. Future demands may require an additional 12,500 square feet to be added
19 to the programmed 17,500-square foot hanger which would equate to a total of 30,000 square
20 feet of facilities required to perform the Predator and Reaper missions. The hangar would be
21 constructed on an undeveloped 15-acre parcel situated adjacent to the east side of Robert Gray
22 Army Airfield (RGAA) ramps and taxiways, near the north base of Beacon Hill

23 Additionally, three (3) 20-foot by 20-foot concrete pads would be constructed at Fort Hood/Fort
24 Polk to station required RPA communication antennas. At Fort Hood, the three concrete pads for
25 the antennas would be constructed on the top of Beacon Hill. While at Fort Polk, the antennas
26 pads would be constructed approximately 800 feet west of the runway.

27 **ALTERNATIVE 1:** In addition to MQ-9 operations, Alternative 1 would include operations by
28 the TXANG of the MQ-1 Predator at Fort Hood. The operational and infrastructure elements
29 associated with this alternative would be the same as those described under the Proposed Action.

30 **NO ACTION ALTERNATIVE:** Under the No Action Alternative, the TXANG would not
31 conduct the described RPA training described above and would not be able to successfully
32 conduct their mission and to maintain wartime readiness and training.

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SUMMARY OF FINDINGS

Potential impacts associated with the Proposed Action have been assessed with regard to the following environmental resource areas:

Air Quality – Emissions from aircraft operations and construction activities associated with the Proposed Action would contribute localized, short-term elevated air pollutant concentrations, but would not result in any long-term impacts to air quality. Both operational and construction emissions would be minimal compared to the local annual emissions. No adverse impacts are expected to regional air quality.

Biological Resources – Neither the Fort Polk nor Fort Hood locations are expected to have a long-term significant impact on biological resources; however, short-term, minor adverse impacts to threatened and endangered species may occur as a result of the construction project at Fort Hood. While a habitat for the Golden-cheeked Warbler is adjacent to the site for the proposed hangar, no take of habitat would occur and major earth-disturbing activities would occur outside of the nesting season (March through August).

Proposed power and data conduits for the antennas would run along the top of the ground or within a trench extending up the side of Beacon Hill, Fort Hood. The conduits would be placed primarily along, or within, a previously disturbed area consisting of a washout that runs along the side of the hill. If trenching operations at Fort Hood are necessary for the conduit installation, trenching would occur outside of the nesting season. At Fort Polk, power and data to the antennas would be extended via underground conduits from nearby sources, requiring only minor trenching to bury the conduits.

In addition, the Proposed Action at Fort Hood would require line-of-sight to both ends of the runway for the antennas located at the top of Beacon Hill. This may necessitate trimming the tops of existing trees. Trimming would be limited to only small branches and would not include sections of the tree trunks. Trimming for line-of-sight would not count as a take under the established Biological Opinion; however, this activity must be done outside of the nesting season.

Construction activities would generate minor species annoyances such as dust and noise; however, these activities would be short-term and limited to the construction phase.

The Proposed Action at the Beacon Hill location at Fort Hood may involve disturbance of grassy areas where migratory birds may forage or nest. If migratory birds are found in the proposed project location, appropriate measures would be taken to ensure that compliance with the Migratory Bird Treaty Act is met, such as limiting construction activities to periods of time when

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migratory birds are not nesting, halting excavation when or if birds are found, and creating buffer zones around the nests. The Proposed Action would have no direct effect on federally listed protected species, or other rare and candidate species.

Cultural Resources – Both Fort Hood and Fort Polk have been surveyed for cultural resources. The candidate building for the hangar at Fort Polk (Building 4265) has been deemed not eligible for the National Register of Historic Places (NRHP). Additionally, the proposed location of the three concrete pads is not associated with known cultural resource or paleontological sites.

At Fort Hood, a single historic site is located towards the southwest corner of the proposed hangar area. This site comprises historic era remains of a farm/ranch from the early 20th century. The site was originally recorded in 1981 as the T.H. Byler Homestead and consists of a sparse artifact scatter, stone well and partial stone fence. The site has been evaluated for listing on the NRHP and has been recommended “not eligible.” This determination has been coordinated with the State Historic Preservation Office and their concurrence received.

There is always the possibility, however remote, that previously unknown or unrecorded archaeological resources can be present beneath the ground surface, sometimes underneath existing development. In the unlikely event that previously unrecorded or unevaluated cultural resources are encountered during construction, compliance with each installation’s Cultural Resources Management Plan would be necessary prior to initiating or continuing that component of the Proposed Action

Airspace – Impacts to airspace resources would not be significant. Both installations have been successfully used for RPA operations for several years and restricted airspace is available at both installations to accommodate proposed Predator training missions. However, Predator operations would require a Certificate of Authorization (COA) from the Federal Aviation Administration (FAA) to augment existing COAs at Fort Polk and Fort Hood.

Airspace management procedures currently in-place at Fort Hood and Fort Polk would be expected to be sufficient to schedule and de-conflict all local flight operations. No adverse impacts to airspace utilization or management are anticipated.

Noise – Predator training would involve the aircraft cruising at altitudes between 5,000 and 30,000 feet above MSL. The Predator is a propeller-driven aircraft powered by a turbocharged four-cylinder engine. Maximum noise levels generated by the Predator at its lowest operational altitude would not be expected to exceed 64 dB directly below the aircraft. Individual overflights may be noticeable, particularly to persons in rural areas, and could potentially be mildly annoying to persons beneath the airspace. However, other military training activities in

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the proposed airspaces would often be substantially louder than the Predator, “drowning out” Predator flight noise. Overall noise impacts would be minor and insignificant in nature.

Safety – Since its introduction, the Predator fleet has logged approximately 816,000 hours and has proven to be a reliable system during operations in Afghanistan and Iraq. Through October 2010, the Reaper had flown approximately 101,920 hours. The DoD has implemented a formal training program for RPA pilots that includes classroom, simulator, and actual flight training on the RPA. This formalized training would enhance the safe operation of the RPA. Additionally, current safety policies and procedures at each installation are designed to ensure that the potential for aircraft mishaps is reduced to the lowest possible level. These safety policies and procedures would continue under the Proposed Action.

Because RPAs operate at lower speeds and have smaller profiles than manned aircraft, the potential for bird-aircraft strikes causing catastrophic damage would be expected to be extremely low.

In the unlikely event that communication between control personnel could not be maintained through primary or secondary systems, the Predator would proceed to its pre-programmed controlled landing point and, if aircraft condition allow, the aircraft would be landed safely. The pre-programmed controlled landing point for the aircraft would be within the restricted areas.

No significant adverse impacts to flight or ground safety are anticipated from implementation of the Proposed Action.

Hazardous Materials and Solid/Hazardous Waste – No significant adverse impacts would be expected at either installation from the storage, use or disposal of hazardous materials and waste. TXANG personnel would conduct minor maintenance of the aircraft at the host installation, such as battery replacement and oil changes. These activities would be consistent with those currently performed at the installations. All hazardous wastes would be disposed of in accordance with the host installation’s hazardous waste management systems. The storage, handling and use of fuel used in aircraft operations would also be done in accordance with established installation plans and procedures to mitigate the potential for accidental releases.

Municipal solid waste would be generated from construction activities as well as from the the presence of TXANG personnel at the host installation. This increase is considered minimal and would have no significant or adverse impacts to regional landfill capacity. Recycling practices would reduce the actual amount of municipal solid waste disposed at either landfill.

Utilities – The Proposed Action may require new utilities or connection to existing utilities. The increased use of utilities from TXANG personnel is not expected to be significant, nor create any

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adverse impacts with regards to potable water, electrical, natural gas, wastewater demand or infrastructure at Fort Polk or Fort Hood.

Socioeconomic Resources – Under the Proposed Action, approximately 8 to 15 TXANG personnel would permanently relocate to Fort Hood, comprising a combination of active guard and civilian personnel. On-base housing may be utilized, but off-base lodging would more likely be used for these personnel. Due to its proximity to Ellington Field JRB, there would be no personnel permanently relocated to Fort Polk. However, up to 15 TXANG personnel would commute to Fort Hood and Fort Polk for two weeks per month to support training and maintenance activities and to conduct proficiency training.

The additional personnel represent a very small percent of each county/parish's population and are not anticipated to have significant impacts to population. However, the additional personnel would contribute to the local economy from consumption expenditures, but this would only represent a very minor economic contribution.

The Proposed Action is not expected to create significant adverse environmental justice impacts or special risks to children.

Soil Resources – The Proposed Action would not affect wetlands or floodplains. There would be an increase of approximately 225 square feet associated with the construction of the concrete pad. This would result in a negligible increase in potential storm water runoff and a negligible decrease in groundwater recharge.

Implementation of the Proposed Action would result in an estimated maximum new impervious surface area of 15 acres at Fort Hood. While the majority of the proposed project would occur on relatively flat terrain, at Fort Hood trenching operations would occur along the steeper terrain of the hill in soils subject to high water erosion. Use of appropriate BMPs (such as silt fences, straw bale dikes, diversion ditches, riprap channels, or water spreaders) would be implemented to reduce soil erosion and sedimentation. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared, reviewed, and approved prior to the start of construction. Following construction, disturbed areas not covered with impervious surfaces would be reestablished with appropriate vegetation and native seed mixtures and managed to minimize future erosion potential. Therefore, impacts to soil resources (or water resources) would be minor.

Because the Proposed Action would include a construction footprint of greater than 5,000 square feet at Fort Hood, the design requirements of *Unified Facilities Criteria (UFC) Low Impact Development 3-210-10* would also need to be implemented. *UFC 3-210-10* provides the technical criteria, technical requirements, and references for the planning and design of

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applicable projects to comply with stormwater requirements under the Energy Independence and Security Act (EISA) Section 438. These requirements include implementation of Low Impact Development (LID) techniques designed to maintain site hydrology and mitigate the adverse impacts of stormwater runoff and nonpoint source pollution. Methodologies such as bio-retention areas, permeable pavements, cisterns/recycling, or green roofs would be utilized in the project design.

MITIGATION

No mitigation measures would be necessary to reduce significant adverse impacts to less than significant levels.

PUBLIC NOTICE:

The National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) 1500-1508, and 32 CFR 989 require public review of the Environmental Assessment (EA) before approval of the Finding of No Significant Impact (FONSI) and implementation of the proposed action.

The Draft EA for this Proposed Action was mailed to 14 agencies and organizations. A notice of availability for public review was published on 8 April, 2011 in the following newspapers: Beauregard Daily News (DeRidder, LA), Leesville Daily Leader (Leesville, LA), and the Killeen Daily Herald (Killeen, TX). The Draft EA was also made available for public review at the following libraries: Beauregard Parish Library (DeRidder, LA); Vernon Parish Library (Leesville, LA); and the Killeen City Library (Killeen, TX). The review period ran from 9 April 2011 through 8 May 2011.

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FINDING OF NO SIGNIFICANT IMPACT (FONSI):

Based on my review of the facts and analysis in this EA, I conclude that the Proposed Action will not have a significant impact on the quality of the human or natural environment or generate significant controversy either by itself or considering cumulative impacts. Accordingly, the requirements of NEPA, the Council on Environmental Quality (CEQ), and 32 CFR 989, *et seq.*, have been fulfilled, and an Environmental Impact Statement (EIS) is not necessary and will not be prepared.

PETER TUNISON, Colonel, USAF
Executive Secretary
Environmental, Safety, and Occupational Health Council

Date

Fort Hood, TX Signatory (TBD)

Date

Fort Pork, LA Signatory (TBD)

Date

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PRIVACY ADVISORY

Public comments on this Draft Environmental Assessment (EA) are requested. Letters or other written or oral comments provided to the Texas Air National Guard (TXANG) at Ellington Field JRB may be published in the Final EA. As required by law, comments will be addressed in the Final EA and made available to the public. Any personal information provided to TXANG will be used only to identify your intent to make a comment or to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

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1.0 PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) examines the potential environmental impacts resulting from Remotely Piloted Aircraft (RPA) training operations by the 147th Reconnaissance Wing (147 RW) located at Ellington Field Joint Reserve Base (JRB), Texas. The 2005 Defense Base Realignment and Closure (BRAC) Commission eliminated the mission associated with operation of the F-16 fighter aircraft at the installation. As part of Total Force Integration, the 147 RW's mission was subsequently changed to that of a reconnaissance wing operating MQ-1 Predator and MQ-9 Reaper RPAs. These RPAs, which serve in an Intelligence, Surveillance, and Reconnaissance (ISR) role and also can be utilized as a weapons platform, are increasingly becoming a key element in enhancing the United States (U.S.) military capabilities and Homeland Security missions.

Predator/Reaper training utilizes a concept called "Remote-Split Operations" that allows the aircraft to be launched and recovered by a small "Launch and Recovery Element" (LRE) and then handed-off to a "Mission Control Element" (MCE) for the rest of the flight. To support the LRE component of RPA training, the 147 RW requires additional facilities and training resources beyond those available at Ellington Field JRB, Texas. This EA will evaluate the potential impacts of LRE component training at Fort Hood, Texas and Fort Polk, Louisiana, which have been identified as suitable training locations. Chapter 2 presents additional information regarding these aircraft and the associated training aspects.

The EA identifies any applicable management actions, mitigation measures, and best management practices (BMPs) that would avoid or minimize environmental impacts relevant to the implementation of the Proposed Action and alternatives (to include the No Action Alternative). The regional setting is illustrated in Figure 1.1-1.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989, *et seq.*, *Environmental Impact Analysis Process* (EIAP) (formerly promulgated as Air Force Instruction [AFI] 32-7061), the National Guard Bureau (NGB) has prepared this EA that will consider the potential consequences to the human and natural environment that may result from implementation of these projects.

*Proposed Operation (Launch and Recovery Element) of MQ-1 Predator and MQ-9 Reaper Aircraft
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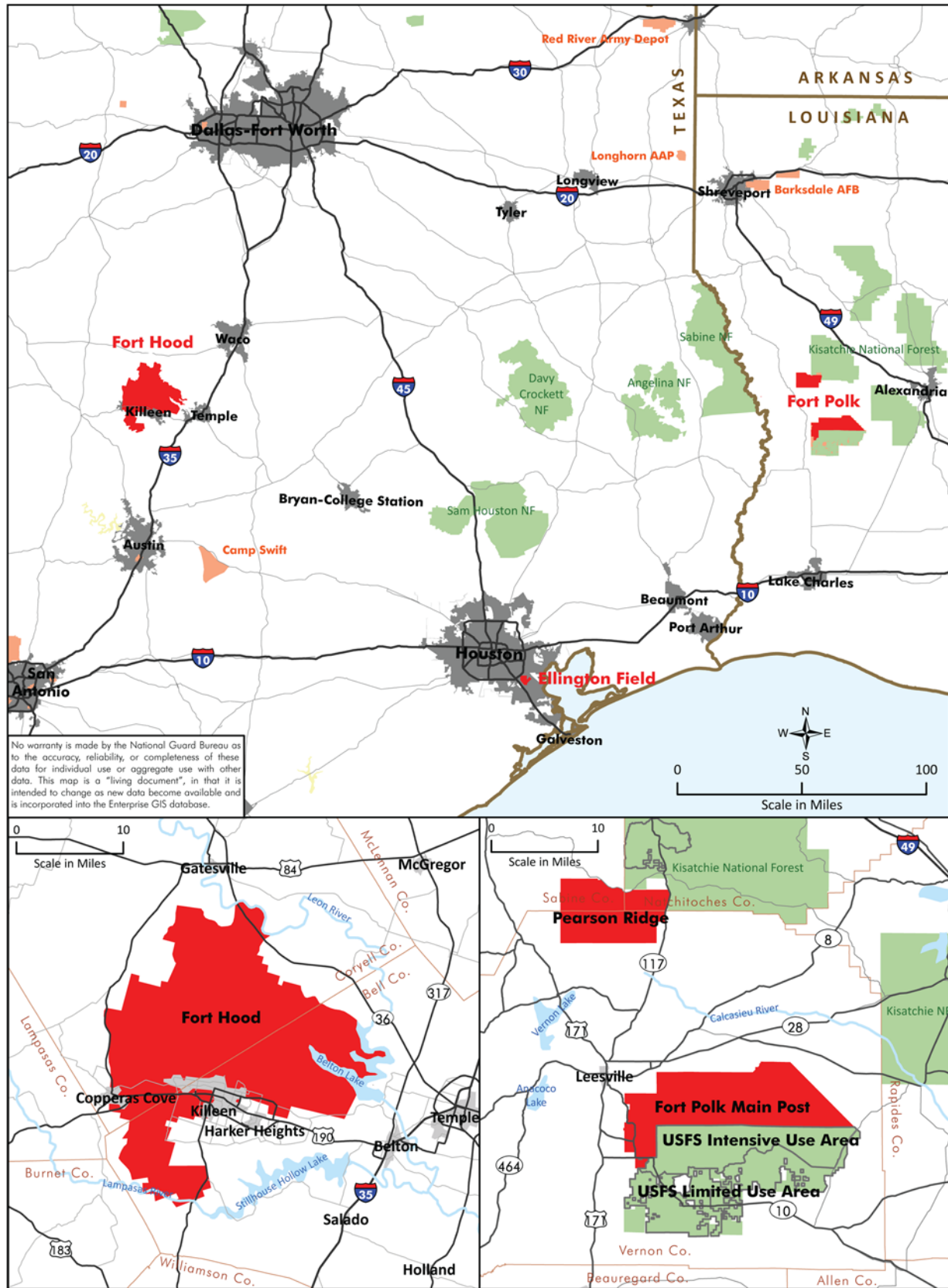


Figure 1.1-1. Regional Setting of the Proposed Action and Alternatives

1.2 LOCATION AND DESCRIPTION OF FORT HOOD, TEXAS AND FORT POLK,
LOUISIANA

The proponent of this action is the Texas Air National Guard (TXANG), 147 RW, located in Houston, Texas at Ellington Field JRB. The installation is approximately 20 miles southeast of downtown Houston, occupies approximately 213 acres, and is located 10 miles east of Houston Hobby airport. The 147 RW operated F-16 fighter aircraft before its conversion to an MCE. In its new role, the 147 RW will support the mission to conduct worldwide reconnaissance and combat operations with the MQ-1 and MQ-9 aircraft, as well enhance mobility and deployment training in accordance with the U.S. Air Force (USAF) war and mobilization plans.

RPA flight, maintenance, and training operations as described in this document, would occur in Fort Hood, Texas and Fort Polk, Louisiana. These two installations are described below.

Fort Hood is located in Bell and Coryell County, Texas, approximately 70 miles northwest of Austin and 70 miles southwest of Waco. Units stationed at Fort Hood include but are not limited to: 1st Army Division West; 1st Cavalry Division; 3^d Armored Cavalry Regiment; 3^d Air Support Operations Group (ASOG); 13th Sustainment Command (Expeditionary); and six other brigade-size units. Fort Hood is designated as a power projection platform from which forces deploy by air, rail, and sea to areas of operation around the world. The installation also supports other assigned and tenant organizations including the Army Reserve, the National Guard, the Reserve Officer Training Corps, and reservists from other military services.

Fort Polk is located in west-central Louisiana in Vernon Parish, near the communities of Leesville and DeRidder, and about 15 miles east of the Texas-Louisiana border. Fort Polk is home to the 2^d Armored Cavalry Regiment affiliated with the XVIII Airborne Corps and the Warrior Brigade. Fort Polk is also home to the Joint Readiness Training Center (JRTC). The JRTC provides advanced-level joint training for Army, USAF, Army National Guard, Navy, and Marine units under conditions that simulate low- to mid-intensity conflicts. In addition, as with Fort Hood, Fort Polk is designated as a power projection platform.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to provide TXANG personnel with the training facilities and airspace necessary to effectively perform their RPA mission. The Predator and Reaper provide real-time ISR and combat support to troops stationed in combat areas overseas. RPA flight, maintenance, and training operations must be performed from a secure military installation and require access to controlled airspace that avoids populated areas. Because of the proximity to the heavily populated areas of Houston, and the lack of nearby restricted airspace, flight training requirements cannot be met at Ellington Field JRB. Therefore, there is a need to

1 establish training operations at a nearby military installation (i.e., Fort Hood and Fort Polk) that
2 can provide the required secure airspace and facilities. If the Proposed Action is not
3 implemented, TXANG combat operations will be degraded and personnel will be unable to fully
4 implement their RPA mission.

5 1.4 DECISION TO BE MADE

6 The NGB will make an informed decision as whether to:

- 7 • Establish RPA flight, maintenance, and training operations by the 147 RW at Fort Polk,
8 Louisiana and Fort Hood, Texas (Proposed Action/Preferred Alternative); or
- 9 • In addition to MQ-9 operations, establish operations by the TXANG of the MQ-1
10 Predator at Fort Hood (Alternative 1); or
- 11 • Not implement required RPA training (No Action Alternative). In this case, the ability of
12 the TXANG to meet readiness, combat preparedness, and training objectives will be
13 adversely affected.

14 1.5 ISSUES NOT CARRIED FORWARD FOR DETAILED ANALYSIS

15 The determination of issues to be analyzed versus those not carried forward for detailed analysis
16 is part of the EA scoping process as described in 40 CFR 1501.7(a) (3), which states that issues
17 addressed in prior environmental review, or that are not significant, may be eliminated from
18 discussion in the EA.

19 The following environmental resource areas were found to have no applicability to the Proposed
20 Action or No Action Alternative, as there would be no potential for direct, indirect, or
21 cumulative impacts. Therefore, these environmental resource areas are not carried forward for
22 detailed analysis in the EA.

- 23 • *Land Use* – The Proposed Action would not result in changes to overall land use
24 classifications at the installations.
- 25 • *Transportation* – The Proposed Action does not involve the creation of new roads or the
26 closing of existing roads. Traffic flow would be similar to current conditions because the
27 Proposed Action does not involve a significant increase in personnel. Therefore, detailed
28 analysis regarding transportation is not required.
- 29 • *Water Resources* – There are no wetlands, floodplains, or other water resources within
30 potentially affected areas at Fort Polk. At Fort Hood, there is a small emergent wetland
31 located towards the southwest corner of the proposed hangar site. This wetland, which is
32 approximately 0.178 acres in size, is classified as a Palustrine Emergent Wetland that has

no hydrologic connection to other waters of the U.S. or other wetlands, and is considered non-jurisdictional with regard to the current legal interpretation of Clean Water Act (CWA) Section 404. Regardless, the proposed hangar project will be designed to avoid any direct or indirect impacts to this wetland. Impacts associated with soil erosion, including erosion control BMPs, stormwater permitting, and changes to impervious surface area would be evaluated under the Soils resource area (see below). Therefore, detailed analysis regarding water resources is not required.

1.6 ENVIRONMENTAL RESOURCE AREAS CARRIED FORWARD FOR ANALYSIS

After preliminary analysis of potential environmental issues, the following resource areas will be carried forward for further analysis in the EA due to the potential for direct, indirect, or cumulative impacts:

- *Air Quality* – The analysis will address the potential for fugitive dust and combusive emissions from the short-term construction and aircraft operations.
- *Airspace Management* – The analysis will address airspace use and management associated with use of the Predator/Reaper operations.
- *Biological Resources* – The analysis will address biological resources habitats potentially impacted by construction and operational activities. Potential issues with bird strikes are discussed as a safety issue in the Airspace Management and Safety sections.
- *Cultural Resources* – The analysis will address the potential to affect structures that could be eligible for listing with the National Register of Historic Places (NRHP).
- *Hazardous Materials and Solid/Hazardous Wastes* – The analysis will address hazardous materials utilized and waste generated from the maintenance of the Predator/Reaper.
- *Noise* – The analysis will address potential effects related to noise generated from aircraft operations. The analysis will also address short-term construction noise.
- *Safety* – The analysis will address safety associated with Predator/Reaper operations. The potential for bird-aircraft strike potential is also discussed.
- *Socioeconomic Resources* – The analysis will address potential effects to socioeconomic resources including disproportionate impacts to sensitive populations such as children, minorities, and low-income communities, as mandated by Executive Orders (EOs) 13045 and 12898.
- *Soils* – The analysis will evaluate issues associated with soil disturbance/erosion associated with proposed construction and trenching activities. Impacts of stormwater

borne erosion, including erosion control BMPs, stormwater permitting, and changes to impervious surface areas would also be evaluated.

- *Utilities* – The Proposed Action would require new utilities, including electrical systems, fire detection and suppression, communication, mechanical and heating, ventilation, and air conditioning (HVAC) systems and therefore is studied in detailed analysis.

1.7 COMPARISON OF ALTERNATIVES

The environmental consequences associated with implementation of the Proposed Action (Preferred Alternative) and the No Action Alternative are presented and compared in Table 1.7-1.

Table 1.7-1. Consequences of Alternatives

<i>Issue Category</i>	<i>Proposed Action (Preferred Alternative) and Alternative 1 Fort Hood, Texas</i>	<i>Proposed Action (Preferred Alternative) Fort Polk, Louisiana</i>	<i>No Action Alternative</i>
Air Quality	–	–	o
Airspace Management	–	–	o
Biological Resources	–	o	o
Cultural Resources	–	–	o
Hazardous Materials and Wastes	–	–	o
Noise	–	–	o
Safety	–	–	o
Socioeconomic Resources	+	+	o
Soils	–	–	o
Utilities	–	–	o

Notes:

- o = No Net Impact
- = Minor Negative Impact
- – = Significant Negative Impact
- +
- ++ = Major Beneficial Impact

1.8 SUMMARY OF KEY ENVIRONMENTAL REQUIREMENTS

1.8.1 NATIONAL ENVIRONMENTAL POLICY ACT

NEPA requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued the Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR Sections 1500–1508) (CEQ 1978). The activities addressed within this document constitute a federal action and therefore must be assessed in accordance with NEPA. To comply with NEPA, as well as other pertinent environmental requirements, the decision-making process for the Proposed Action includes the development of this EA to evaluate the potential environmental

impacts associated with the proposed activities. The USAF implementing procedures for NEPA are contained in 32 CFR 989 *et seq.*, *Environmental Impact Analysis Process*.

1.8.2 CULTURAL RESOURCES REGULATORY REQUIREMENTS

The National Historic Preservation Act (NHPA) of 1966 (16 USC § 470) established the NRHP and the Advisory Council on Historic Preservation (ACHP) outlining procedures for the management of cultural resources on federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where important historic events occurred. NHPA requires federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the NRHP; designated as a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. Section 106 of NHPA requires federal agencies to consult with State Historic Preservation Offices (SHPOs) if their undertakings might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR 800 [1986]) provided an explicit set of procedures for federal agencies to meet their obligations under the NHPA, which includes inventorying of resources and consultation with the SHPO.

In March 2010, Fort Hood's Historic Properties Component (HPC) was certified by the ACHP. The HPC is a compliance document that implements the Army Alternate Procedures (AAP) in lieu of regular Section 106 requirements of the NHPA outlined in 36 CFR 800.14. The most significant difference between the AAP and 36 CFR 800 is that the programmatic project review process prescribed in the AAP replaces the project-by-project review outlined in 36 CFR 800. By reviewing undertakings internally and by having afforded consulting parties the opportunity to participate in the document development and annual reviews, an installation will continue to comply with Section 106 when operating under the AAP.

The American Indian Religious Freedom Act (AIRFA) (42 USC § 1996) established federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §§ 3001–3013) requires consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance.

Department of Defense (DoD) *American Indian and Alaska Native Policy* (1999) and DoD Instruction (DODI) 4710.02, *DoD Interactions with Federally-Recognized Tribes* (2006), provide guidance for interacting and working with federally recognized American Indian governments. DoD policy requires that installations provide timely notice to, and consult with, tribal governments prior to taking any actions that may have the potential to affect protected tribal resources, tribal rights, or American Indian lands.

1.8.3 THREATENED AND ENDANGERED SPECIES

The Endangered Species Act of 1973 (ESA) [16 USC 1532 et. seq.] was signed on December 28, 1973, and provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA replaced the Endangered Species Conservation Act of 1969; it has been amended several times. All federal agencies are required to implement protection programs for designated species and to further the purposes of the ESA, as amended.

Fort Hood has prepared an Endangered Species Management Plan (ESMP) which provides comprehensive guidelines for maintaining and enhancing populations and habitats of federally listed and candidate species on Fort Hood while maintaining mission readiness consistent with Army and Federal environmental regulations.

1.8.4 OTHER REGULATORY REQUIREMENTS

Additional regulatory legislation that potentially applies to the implementation of this proposal includes guidelines promulgated by EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to ensure that citizens in either of these categories are not disproportionately affected. Additionally, potential health and safety impacts that could disproportionately affect children are considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

1.8.5 ENVIRONMENTAL COORDINATION

EO 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental impacts of a Proposed Action. Comments from these agencies are subsequently incorporated into the EIAP.

In its October 1999 annotated *Department of Defense American Indian and Alaska Native Policy*, formulated to address DoD responsibilities to tribes derived from a number of federal statutes and policies, DoD has clarified its policy for interacting and working with federally recognized American Indian and Alaska Native governments. Under this policy guidance, proponents must provide timely notice to, and consult with, tribal governments prior to taking any actions that have the potential to affect protected tribal resources, tribal rights, or Indian lands. Tribal input must be solicited early enough in the planning process that it may influence the decision to be made.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter presents a description of the Proposed Action to establish MQ-1 Predator and MQ-9 Reaper LRE component training by the TXANG. The details of the Proposed Action and alternative action form the basis for the analyses of potential environmental impacts. This section also includes a discussion of the considerations used to identify candidate alternatives. This chapter also addresses the No Action Alternative.

The Predator and Reaper RPAs are unmanned aircraft systems with a primary mission to perform intelligence, surveillance, and reconnaissance for precision strike capability. These RPAs support the Joint Forces Component Commander.

The MQ-1 Predator and MQ-9 Reaper are fixed-wing, medium-altitude, long-endurance aircraft. The Predator, in use since 1995, has seen combat over Afghanistan, Pakistan, Bosnia, Serbia, Iraq, and Yemen. The MQ-9 Reaper (originally known as the Predator B) is a larger aircraft than the MQ-1 Predator, although it can be controlled by the same ground systems used to control MQ-1s. The MQ-9 Reaper is not scheduled to enter operational service until 2015. The MQ-1 Predator has a 115 hp (86 kW) piston engine, while the Reaper has a 950-shaft-horsepower (712 kW) turboprop engine. The MQ-1 has a length, wingspan, and height of 27 feet, 49 feet, and 7 feet, respectively, while the MQ-9 has a length, wingspan, and height of 36 feet, 66 feet, and 12.5 feet, respectively. The MQ-1 Predator and MQ-9 Reaper are depicted in Figure 2.1-1.

A complete Predator/Reaper package consists of four aircraft with sensors, a ground control station (GCS), two ground data terminals (GDTs), a primary predator satellite link (PPSL), and associated operations and maintenance crews. These RPAs can be disassembled into six main components and transported in a container called a “casket.” The primary satellite link, which provides communication between the aircraft and ground crew, is a 20-foot satellite dish with associated components.

The basic Predator/Reaper crew consists of one pilot and one sensor operator who fly the aircraft from inside the GCS through a line-of-sight data link, or via satellite which enables flight beyond line-of-sight.



Predator MQ-1 Aircraft



Reaper MQ-9 Aircraft

Figure 2.1-1. MQ-1 Predator and MQ-9 Reaper Aircraft

- 1 The targeting system integrates electro-optical, infrared, and laser functions into a single sensor
2 package. The Predator and Reaper are configured to carry two and four AGM-114 Hellfire
3 missiles, respectively. Additionally, the Reaper may carry up to two bombs, with a total carrying
4 capacity of 3,000 pounds of ordnance. However, training under the Proposed Action would not
5 include live fire operations.
- 6 Predator/Reaper training comprises a concept called “Remote-Split Operations” where the
7 satellite datalink is located in a different location and is connected to the GCS through fiber optic
8 cabling. This allows Predator and Reaper aircraft to be launched and recovered by a small LRE
9 component and then handed off to an MCE for the rest of the flight. This also allows a smaller
10 number of troops to be deployed to a forward location, and consolidates control of the flight
11 operations in one location.

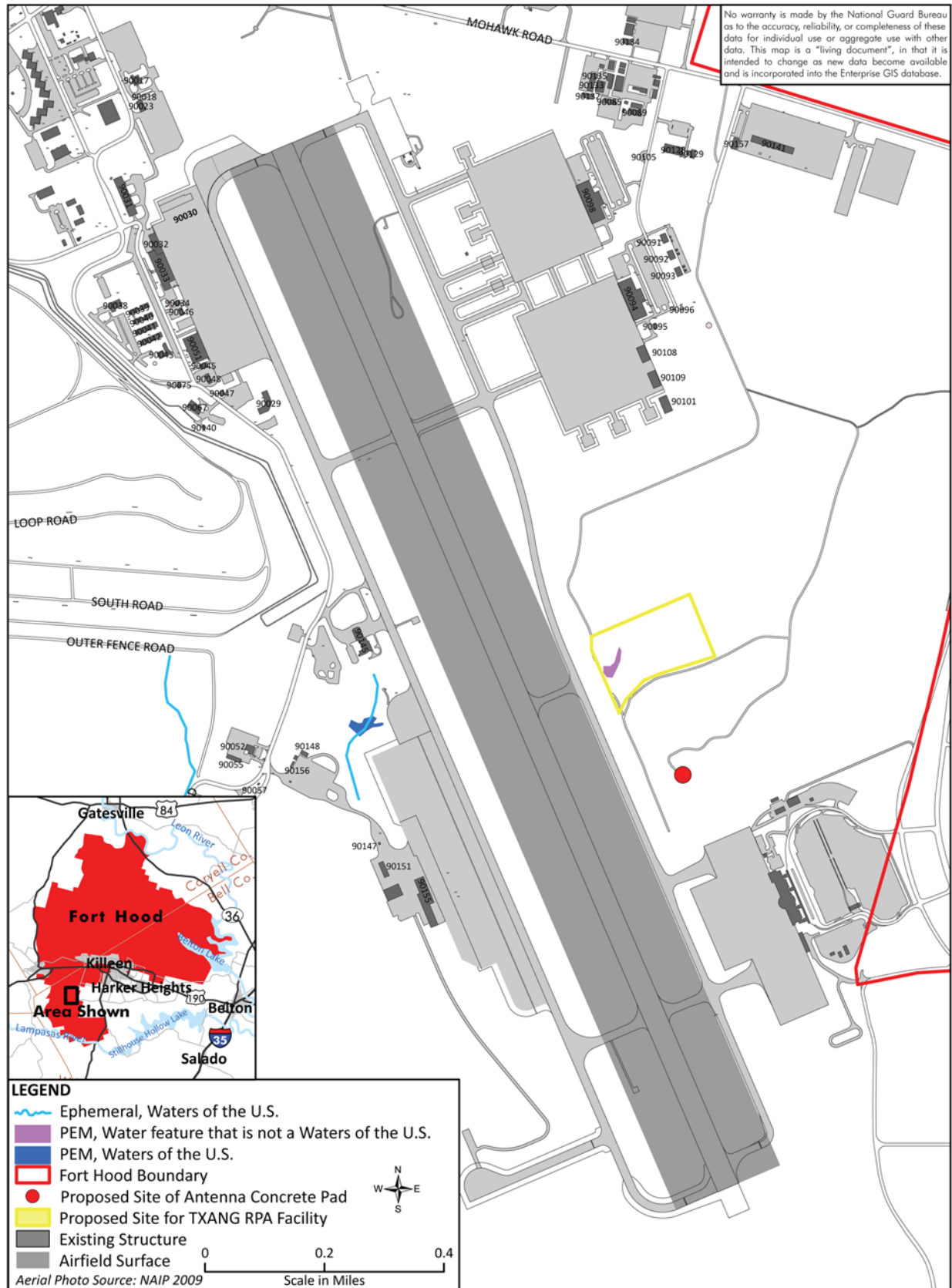
2.2 ALTERNATIVE SELECTION PROCESS

2.2.1 CRITERIA

During development of the project siting phase, alternative locations for the LRE phase of Predator training were evaluated and the best possible solution for project siting was selected based on numerous criteria.

- Because of security considerations, it is preferable that operations proceed from a secure military installation.
- Ability to obtain a Certificate of Authorization (COA) from the Federal Aviation Administration (FAA) for flight operations. All documentation has been submitted and the 147 RW is awaiting the COA from the FAA for operations at Fort Polk.
- Operations must be conducted away from heavily populated areas.
- Predator aircraft must have access to military training (active restricted) airspace after takeoff, or have a dedicated chase plane for “see and avoid” purposes.
- Site alternatives need to have suitable and available hangar space to store the four aircraft, personnel, and other equipment that would be operating on-site.
- Site alternatives need to be suitable for construction of three (3) 20-foot by 20-foot concrete pads. Two pads will support the GDTs and one pad will support the PPSL. These three pads should pose no significant impacts or development constraints that would result in excessive construction costs or schedule delays.
- Operating runways must meet minimum length requirements. Predator operations normally require a hard surface-runway 5,000 feet in length by 125 feet wide. Note: A waiver may be obtained allowing the TXANG to conduct Predator flight training operations at runways that do not meet the minimum length. Reaper operations require a hard surface-runway 7,000 feet in length by 125 feet wide.
- Ground crews must have a clear line-of-sight to each end of the runway for aircraft landing and takeoffs.
- Pad for PPSL with a security fencing capability to support a PL-3 rated asset. Site alternatives would be designed to avoid any direct or indirect impacts to nearby water resources, including wetlands. At Fort Hood, a small non-jurisdictional wetland is located towards the southwest corner of the proposed hangar site (Figure 2.2-1). NGB would consult with Fort Hood Public Works personnel during the construction design phase to ensure that impacts to this wetland are avoided.

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1 Because of the proximity to heavily populated areas of Houston and the lack of nearby restricted
2 airspace, flight training requirements cannot be met at Ellington Field JRB. Commuting time
3 constraints limited other potential sites to airfields located within approximately three hours of
4 Ellington Field JRB.

5 A total of six sites have been evaluated as part of the alternatives selection process for their
6 suitability for RPA training: Fort Polk, Louisiana; Fort Hood, Texas; Lackland Air Force Base
7 (AFB), Texas; Sheppard AFB, Texas; Scholes International Airport (Galveston, Texas); and
8 Brazoria County Airport, (Angleton, Texas). Based on the evaluation, Fort Polk and Fort Hood
9 were determined to be the only acceptable alternatives, meeting the required selection criteria
10 described above, and are carried forward as comprising the Proposed Action throughout this
11 document. The other sites listed were deemed unsuitable for RPA training because of their
12 location near population centers, lack of access to military training airspace, or because they did
13 not meet required security criteria.

14 2.3 CURRENT TRAINING BY THE 147 RW OF THE TXANG

15 The MQ-1 Predator has been assigned to the 147 RW at Ellington Field JRB since 2008. The
16 147 RW has three complete MQ-1 Predator systems assigned to its inventory, which is a total of
17 12 aircraft with all associated equipment. The MQ-9 Reaper is scheduled to enter operational
18 service with the 147 RW in 2015. Currently, 147 RW personnel assemble newly-deployed MQ-
19 1s and conduct routine, ground-based test and maintenance of its existing Predator fleet.
20 Because of the proximity to heavily populated areas and the lack of nearby restricted airspace,
21 flight operations are not currently launched from Ellington Field JRB.

22 However, there is an active MCE at Ellington Field with TXANG pilots currently flying MQ-1s.
23 The 147 RW pilots take control of the aircraft once it has been “handed-off” by the LRE element
24 in the field.

25 *Note: The impacts associated with the deployment of the MQ-1 Predator at Ellington Field JRB*
26 *were covered under a previous and separate NEPA Action. Therefore, this EA will not evaluate*
27 *impacts associated with deployment of the MQ-1 at Ellington Field JRB. Additionally, the*
28 *TXANG would prepare appropriate NEPA analysis to address maintenance activities prior to*
29 *taking receipt of the MQ-9 weapons system.*

30 2.4 PROPOSED ACTION (PREFERRED ALTERNATIVE)

31 The TXANG proposes to implement MQ-1 Predator training at Fort Polk, Louisiana and MQ-9
32 Reaper LRE training at Fort Hood, Texas. Predator and Reaper operations require a 5,000- and
33 7,000-foot runway, respectively.

Fort Hood has a 10,000-foot runway that meets the length requirements; however, the runway at Fort Polk is only 3,900 feet in length (4,100 feet with displaced thresholds). Due to its higher performance, the Reaper may not operate out of the shorter runway at Fort Polk; however, Predator operations may occur at Fort Polk with a waiver to operate the aircraft from a shorter runway. The MCE would continue to be located at Ellington Field JRB. The RPAs can be “handed-off” from the LRE to the MCE once the aircraft is launched, or the entire mission can be flown from Fort Polk.

2.4.1 COMMON OPERATIONAL ELEMENTS

The following elements are common to operations at both Fort Polk and Fort Hood:

The aircraft would be transported via trucks to the installations and assembled and maintained there, with up to four aircraft located on the installations at any one time. Flying operations would be conducted during weekdays or on the weekends, as required.

At Fort Hood/Fort Polk, the TXANG would conduct one 8-hour training sortie per day, 5-days per week (up to 250 sorties per year). The sorties may include “Touch-and-Go’s” and night operations, with flying operations starting in Fiscal Year 2012 (FY12) to FY13. Flying operations may also be scheduled to coincide with the fly days of each Air Combat Command Green Flag (E) exercise.

Operational altitude would vary between 5,000 and 30,000 feet above mean sea level (MSL). While in flight, the aircraft would use targets of opportunity, such as vehicles on ground, to evaluate system performance. There would be no live-fire missions at either installation. Standard aircraft weather minimums would apply during flight operations; missions would avoid flying in rain, thunderstorms, ice, etc.

TXANG personnel would conduct minor maintenance of the aircraft while on-site, including batteries and oil changes. The aircraft would be transported back to Ellington Field JRB for any major maintenance requirements, such as engine overhauls. The Predator aircraft uses aviation gasoline, while the Reaper uses JP-8 fuel. Both aircraft have an onboard fuel capacity of approximately 100 gallons. The TXANG would purchase aircraft fuel and have it delivered to the installations. Fuel for the aircraft would be stored in two 400-gallon double-walled aboveground tanks equipped with interstitial monitoring. The fuel tanks would be owned and operated by the 147 RW.

Approximately 8 to 15 TXANG personnel would permanently relocate to Fort Hood, comprising a combination of active guard and civilian personnel. On-base housing may be utilized, but off-base lodging would more likely be used for these personnel. Due to its proximity to Ellington Field JRB, there would be no personnel permanently relocated to Fort Polk. However, up to 15

TXANG personnel would commute to Fort Hood and Fort Polk for two weeks per month to support training and maintenance activities and to conduct proficiency training.

Travel would be accomplished by carpooling using a mix of government-owned and privately-owned vehicles. While located on-site, personnel would use available off-base lodging. The TXANG would operate up to six government vehicles (sedans or pickups) at Fort Hood/Fort Polk.

Three (3) 20-foot by 20-foot concrete pads would be constructed at Fort Hood/Fort Polk to station the GDTs and PPSL. Each GDT comprise a 5-foot high, 4-wheel trailer equipped with a retractable antennal. The antenna would typically be extended up to 20 feet, but can be raised up to 80 feet. The PPSL is a circular 20-foot dish that provides direct communication with the aircraft. Power and data conduits (containing four cables) would be required for each of the two GDTs and the PPSL. A 15-gallon diesel backup generator would be located at the antenna site to provide power in case of a power failure.

2.4.2 INFRASTRUCTURE ELEMENTS

Fort Hood

Fort Hood does not have an existing hangar that could be used to house the RPA mission. Therefore, the TXANG would construct a new 17,500-square foot hangar to accommodate training requirements. Future demands may require an additional 12,500 square feet to be added to the programmed 17,500-square foot hanger which would equate to a total of 30,000 square feet of facilities required to perform the Predator and Reaper missions. The hangar would be constructed on an undeveloped 15-acre parcel situated adjacent to the east side of Robert Gray Army Airfield (RGAA) ramps and taxiways, near the north base of Beacon Hill (see Figure 2.4-1 and Figure 2.4-2). For the purpose of this EA, it is assumed that the currently undeveloped 15 acres where the hangar would be situated would be completely paved to provide space for aircraft ramps, taxiways, and parking areas. Administrative space for all TXANG personnel would be provided in the new hangar, with no additional facilities needed during the initial beddown.



Figure 2.4-1. Potential Site of New TXANG Hangar, Fort Hood Texas

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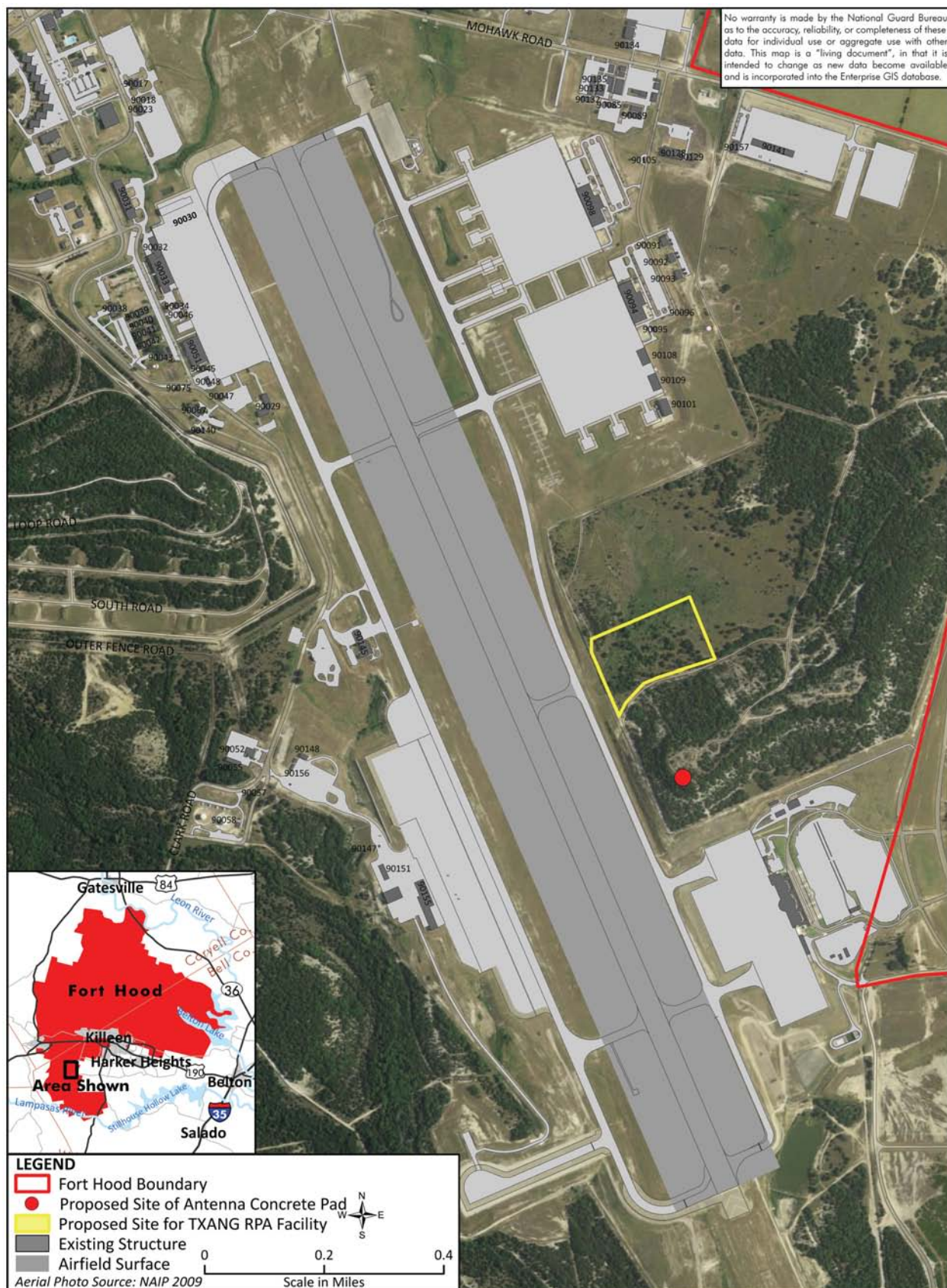


Figure 2.4-2. Potential Site of TXANG Hangar and Antenna Pads at Fort Hood, TX

1 The three (3) concrete pads for the GDTs and PPSL would be constructed on the top of Beacon
2 Hill. Again, the location was chosen because the GDTs must have line-of-sight to both ends of
3 runway. The tops of trees (branches not trunks) may need to be trimmed to allow for line-of-
4 sight to both ends of the runway.

5 Power and data cable conduits would be required for each of the two GDTs and the PPSL. The
6 conduits would extend from the hangar area at the base of the hill to the GDTs/PPSL. The
7 conduits would run along the top of the ground or within a trench extending up the side of
8 Beacon Hill. The conduits would be placed primarily along, or within, a previously disturbed
9 area consisting of a washout that runs along the side of the hill. The path for the proposed
10 conduits is depicted in Figure 2.4-3.

11 During the site visit, it was observed that portions of an existing conduit are located along this
12 area. The existing conduit appears to run from the airfield to the radio tower on top of the hill.

13 ***Fort Polk***

14 Fort Polk has suitable building space to store the MQ-1 aircraft; therefore, infrastructure
15 improvements would consist of construction of the three concrete pads and secure utility and
16 communication connections to support the fixed and/or mobile GDTs and the PPSL. The
17 TXANG would utilize an existing hangar (Building 4265), to house the Predator aircraft and
18 supporting personnel (see Figure 2.4-4 and 2.4-5). This facility would require only minor
19 interior alterations to provide for specific operations and administrative capabilities.

20 As Figure 2.4-4 shows, the three (3) 20-foot by 20-foot concrete pads for the GDTs and PPSL
21 would be constructed approximately 800 feet west of the runway. This location was chosen
22 because the GDTs must have line-of-sight to both ends of the runway. Power and data to the
23 antennas would be extended via underground conduits from nearby sources, requiring only
24 minor trenching to bury the conduits.

25 **2.5 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD**

26 In addition to MQ-9 operations, Alternative 1 would include operations by the TXANG of the
27 MQ-1 Predator at Fort Hood. The operational and infrastructure elements associated with this
28 alternative would be the same as those described under the Proposed Action.

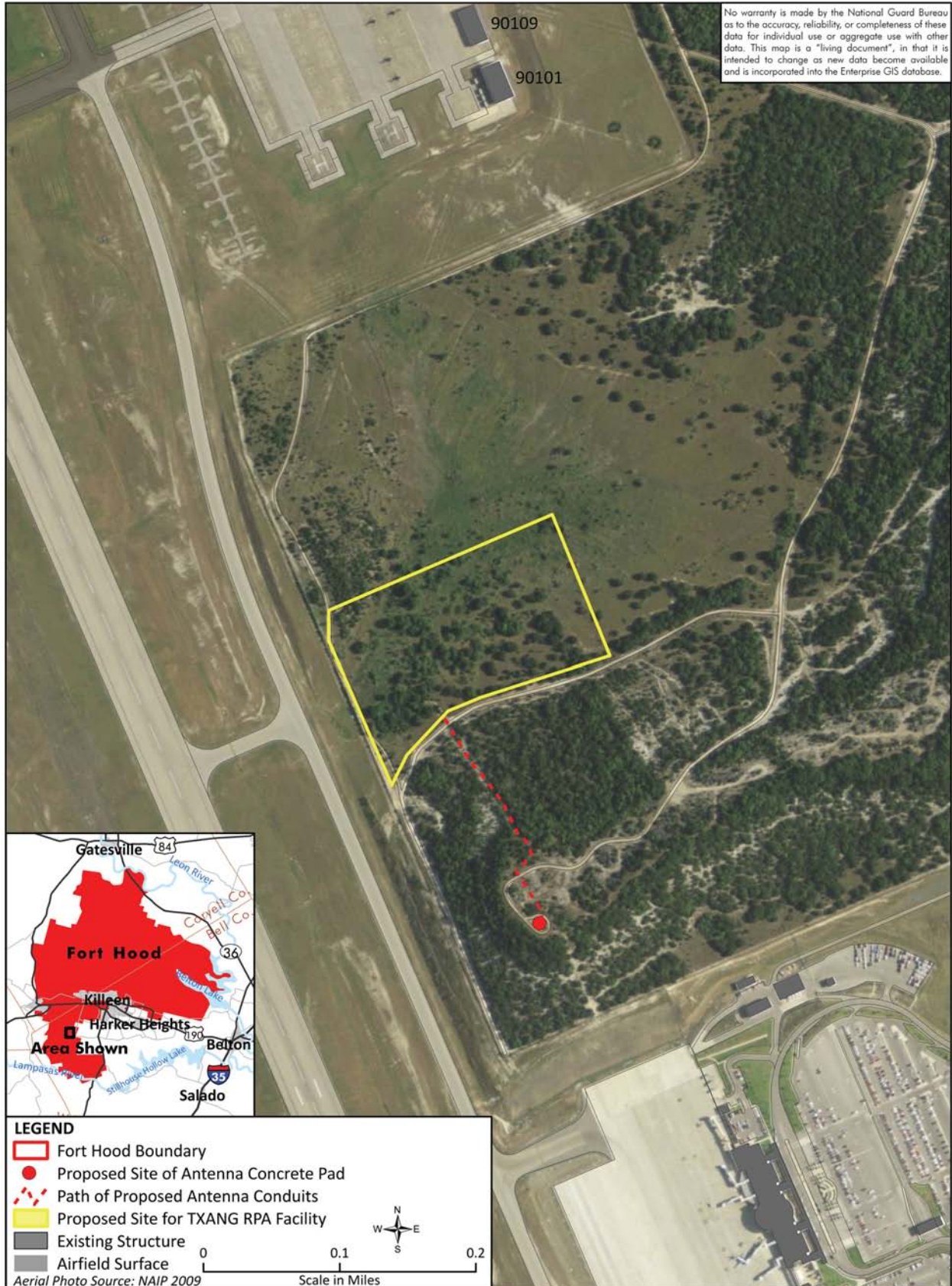


Figure 2.4-3. Close-up View of Proposed Path of Antenna Conduit at Fort Hood, TX

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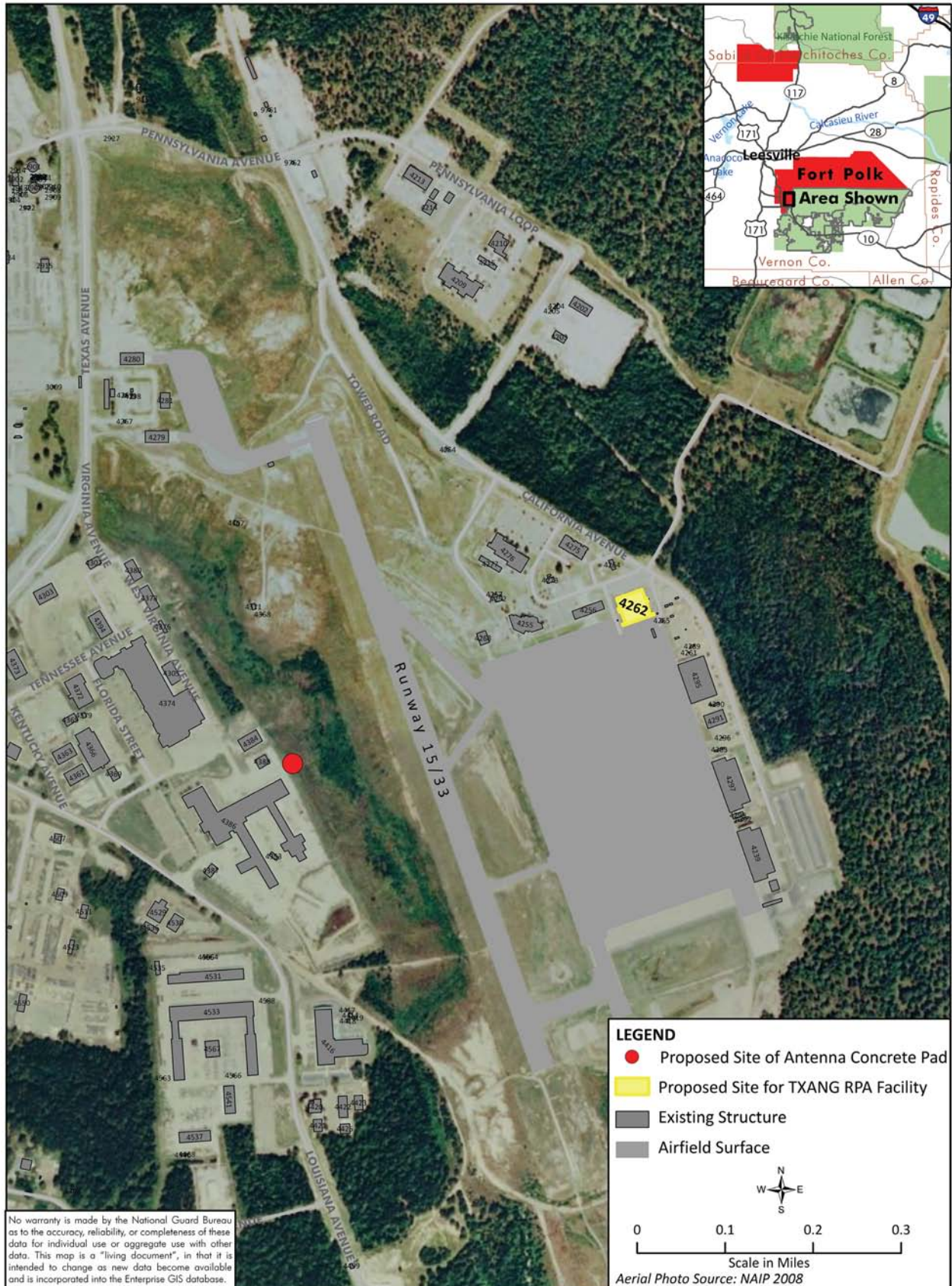


Figure 2.4-4. Location of Building 4265 and Proposed Antenna Pads at Fort Polk, LA



Figure 2.4-5. Potential Hangar Site, Fort Polk, Louisiana

1 2.6 NO ACTION ALTERNATIVE

2 The CEQ regulation 40 CFR Section 1502.14(d) specifically requires analysis of the “No
3 Action” alternative in all NEPA documents. Under the No Action Alternative, the TXANG
4 would not implement the actions described above. The TXANG would not conduct the
5 described RPA LRE training and would not be able to successfully conduct their mission and to
6 maintain wartime readiness and training.

3.0 AFFECTED ENVIRONMENT

Chapter 3.0 describes the environmental conditions potentially affected by the Proposed Action. This section provides information to serve as a baseline from which to identify and evaluate environmental changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The description of potential environmental impacts of implementing the Proposed Action or its alternative is in Chapter 4.0.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, *et seq.*, the description of the affected environment focuses on those resources and conditions potentially subject to impacts. These resources and conditions include air quality, biological resources, cultural resources, hazardous materials and waste, noise, safety, and water resources.

3.1 AIR QUALITY

3.1.1 DEFINITION OF RESOURCE

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare.

Based on measured ambient air pollutant concentrations, the U.S. Environmental Protection Agency (USEPA) designates whether areas of the U.S. meet the NAAQS. Those areas demonstrating compliance with the NAAQS are considered “attainment” areas, while those that are not are known as “nonattainment.” Those areas that cannot be classified on the basis of available information for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise.

3.1.2 EXISTING CONDITIONS

The proposed actions would occur in Fort Hood, Texas which is located in Bell and Coryell Counties and/or Fort Polk, Louisiana located in Vernon Parish. Therefore, for this analysis the Region of Influence (ROI) is Bell and Coryell Counties for actions at Fort Hood, and Vernon Parish for actions at Fort Polk.

Ellington Field JRB is located in Harris County which is considered severe nonattainment for 8-hour ozone (O₃) and attainment for all other criteria pollutants (TCEQ, 2009c and USEPA, 2010). This means that according to general conformity the air quality control region cannot exceed 25 tons per year (tpy) of volatile organic compounds (VOCs) or Nitrogen Oxides (NO_x) as O₃ precursors. Vehicle emissions from personnel traveling from Ellington to one of the two sites are the only actions occurring at or around Ellington Field JRB, therefore only vehicle emissions would be held to the 25 tpy criteria. All other emissions would be compared against the respective counties/parish.

3.1.2.1 Regional Conditions

Fort Hood

The Texas Commission on Environmental Quality (TCEQ) operates air quality monitors around the state (TCEQ, 2009a; 2009b). Fort Hood is located in Bell and Coryell Counties, which are within the Austin-Waco Intrastate Air Quality Control Region (AQCR) (40 CFR 81.134). There is one O₃ monitor in Bell County at Skylark Field and another may be added once the USEPA finalizes proposed changes to the Ozone National Ambient Air Quality Standards. In the Waco Region there are three monitoring stations as well as ten active monitors in the Austin Region, which is adjacent to the counties where Fort Hood is located. Within the Waco and Austin Regions, carbon monoxide (CO), sulfur dioxide (SO₂), NO_x, O₃, and particulate matter with a diameter less than 2.5 microns (PM_{2.5}) are monitored at various sites (TCEQ, 2009a and b). Currently Bell and Coryell Counties are in attainment for all criteria pollutants (USEPA, 2010).

Fort Polk

The Louisiana Department of Environmental Quality (LDEQ) Air Division operates air monitors throughout the state. Fort Polk is located in Vernon Parish which is within the AQCR 022, Shreveport-Texarkana-Tyler Interstate (40 CFR 81.94). There are no monitoring stations in Vernon Parish, but in nearby parishes, Beauregard, Jefferson Davis and Calcasieu, the following pollutants are monitored: O₃, NO_x, PM_{2.5}, and VOCs (LDEQ, 2004). Vernon Parish is in attainment for all criteria pollutants according the USEPA (USEPA, 2010).

3.1.2.2 Local Air Quality

For comparison purposes, Table 3.1-1 and Table 3.1-2 present the USEPA's 2002 National Emissions Inventory (NEI) data for Bell and Coryell Counties and Vernon Parish (USEPA, 2002). The county data includes emissions data from point sources, area sources, and mobile sources. *Point sources* are stationary sources that can be identified by name and location. *Area sources* are point sources whose emissions are too small to track individually, such as a home or small office building or a diffuse stationary source, such as wildfires or agricultural tilling.

Mobile sources are any kind of vehicle or equipment with gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and non-road. On-road mobile sources consist of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Non-road sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (USEPA, 2005).

Table 3.1-1. Baseline Emissions Inventory for Bell and Coryell Counties

Source Type	Bell County Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Area Source	1,387	445	47,767	923	4120
Non-Road Mobile	9,589	2,586	164	212	1064
On-Road Mobile	50,066	10,384	185	218	3105
Point Source	4,026	132	76	288	739
<i>Total</i>	<i>65,068</i>	<i>13,546</i>	<i>48,192</i>	<i>1,642</i>	<i>9028</i>
Source Type	Coryell County Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Area Source	406	61	13,799	78	857
Non-Road Mobile	1,702	480	33	41	173
On-Road Mobile	8,063	909	24	30	576
Point Source	0.00	0.00	0.00	0.00	0.00
<i>Total</i>	<i>10,171</i>	<i>1,449</i>	<i>13,857</i>	<i>149</i>	<i>1,606</i>

Source: USEPA, 2002

CO – Carbon Monoxide; NO_x – Nitrogen Oxides; PM₁₀ – Particulate Matter; SO_x – Sulfur Oxides; and VOC – Volatile Organic Compounds

Table 3.1-2. Baseline Emissions Inventory for Vernon Parish

Source Type	Vernon Parish Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Area Source	498	72	5,795	5	710
Non-Road Mobile	1,708	333	25	27	276
On-Road Mobile	10,104	1,175	34	45	815
Point Source	131	203	8	30	133
<i>Total</i>	<i>12,441</i>	<i>1,783</i>	<i>5,862</i>	<i>107</i>	<i>1,933</i>

Source: USEPA, 2002

CO – Carbon Monoxide; NO_x – Nitrogen Oxides; PM₁₀ – Particulate Matter; SO_x – Sulfur Oxides; and VOC – Volatile Organic Compounds

Fort Hood

Fort Hood is under the jurisdiction of the U.S. Environmental Protection Agency Region VI and the TCEQ. Fort Hood is considered a major source of hazardous air pollutants and certain criteria pollutants; therefore, existing air emission sources are subject to Maximum Achievable Control Technology Standards. TCEQ approved the renewal of Fort Hood's Title V Operating Permit on February 27, 2007, and currently conducts annual compliance inspections at Fort Hood (Directorate of Public Works, 2007). The installation has implemented the required

programs to maintain compliance with Federal and state air regulations, based on this audit mechanism.

Fort Polk

Fort Polk is a designated major stationary source of air pollutants and operates under CAA Title V, part 70, and Operating Permit No. 2960-0010-V3. Permitted stationary sources include gasoline and JP8 (jet fuel) storage, fueling and dispensing facilities, paint booths, generators, boilers, wastewater treatment facilities, degreasing operations, solvent reclamation, munitions detonation, and engine testing. Total annual emissions under the installations Title V Operating Permit during the period of 1996 to 2001 for criteria pollutants and for toxic and hazardous air pollutants regulated by USEPA or LDEQ are summarized in Table 3.1-3.

Table 3.1-3. JRTC and Fort Polk Clean Air Act Title V Pollutant Emissions (tons)

<i>Year</i>	<i>Criteria Air Pollutants 1</i>					LTAP 2
	Total VOCs	NO_x	CO	SO₂	PM₁₀	
1996	70	26	8	0	2	8.51
1997	98	38	10	3	7	10.89
1998	67	37	9	2	3	14.93
1999	52	29	10	1	2	7.65
2000	47	33	11	1	2	6.8
2001	55	57	35	1	5	6.0
2002	53	55	38	1	5	5

Sources: URS Corporation, 2001 and Fort Polk Air Manager as cited in Tetra Tech, Inc. 2004

Notes:

1. Criteria Air Pollutants: VOCs = volatile organic compounds; NO_x = Nitrous oxides; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = Particulate Matter less than 10 microns in diameter. The JRTC and Fort Polk do not emit reportable quantities of lead, a sixth criteria pollutant.
2. LTAPs = Louisiana Toxic Air Pollutants. Includes “hazardous air pollutants” listed by USEPA and “toxic air pollutants” listed by LDEQ such as benzene derivatives.

3.2 BIOLOGICAL RESOURCES

3.2.1 DEFINITION OF RESOURCE

Biological resources include native or naturalized plants and animals and the habitats, including wetlands, in which they occur. The ROI for biological resources consists of lands within the vicinity of the proposed project areas at Fort Hood and Fort Polk. Although the existence and preservation of biological resources are both intrinsically valuable, these resources also provide essential aesthetic, recreational, and socioeconomic values to society. This section focuses on plant and animal species and vegetation types that typify or are important to the function of the ecosystem, are of special societal importance, or are protected under federal or state law or statute. For purposes of this assessment, sensitive biological resources are defined as those plant and animal species listed as threatened or endangered by the USFWS and species that are listed

1 for conservation-related reasons by the states of Texas and Louisiana. Three categories of
2 protection status are included in this section including 1) federal listed threatened and
3 endangered species, 2) state listed species, and 3) other sensitive species.

4 **Federal Listed Threatened and Endangered Species.** The ESA of 1973 provides protection to
5 species listed under this category. Endangered species are those species that are at risk of
6 extinction in all or a substantial portion of their range. Threatened species are those that could be
7 listed as endangered in the near future.

8 **Other Sensitive Species.** These are usually species of regional concern and may or may not be
9 adopted as state or federally threatened or endangered. At present, these species receive no legal
10 protection under the ESA, although some may be protected under other laws such as those
11 described below.

12 The *Bald Eagle Protection Act of 1940* (16 USC 668-668d, 54 Stat. 250) provides protection for
13 the bald eagle and the golden eagle, prohibiting the taking, possession, or commerce of these
14 birds.

15 The *Migratory Bird Treaty Act of 1918* (16 USC 703-712) provides protection for migratory
16 birds or any part, nest, or egg of such bird through conventions with other countries, and
17 prohibits take, purchase, and transport of these birds.

18 In addition, EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (2001),
19 recognizes the ecological and economic importance of migratory birds to the U.S. and other
20 countries. It requires federal agencies to evaluate the effects of their actions and plans on
21 migratory birds (with an emphasis on species of concern) in their NEPA documents. Species of
22 concern are those identified in 1) the report “Migratory Nongame Birds of Management Concern
23 in the United States,” 2) priority species identified by established plans such as those prepared by
24 Partners in Flight, or 3) listed species in 50 CFR 17.11 *Endangered and Threatened Wildlife*.

25 **Wetlands.** Wetlands are defined by the USACE and USEPA as “those areas that are inundated
26 or saturated by surface or groundwater at a frequency and duration sufficient to support, and that
27 under normal circumstances do support, a prevalence of vegetation typically adapted for life in
28 saturated soil conditions. Wetlands generally include marshes, bogs, and similar areas” (33 CFR
29 328.3[b]). Wetlands provide a variety of functions including groundwater recharge and
30 discharge; floodflow attenuation; sediment stabilization; sediment and toxicant retention;
31 nutrient removal and transformation; aquatic and terrestrial diversity and abundance; and
32 uniqueness. Three criteria are necessary to define wetlands: vegetation (hydrophytes), soils
33 (hydric), and hydrology (frequency of flooding or soil saturation). Section 404 of the (CWA

1 established a program to regulate the discharge of dredged and fill material into waters of the
2 U.S., including wetlands. The USACE, the lead agency in protecting wetland resources,
3 maintains jurisdiction over federal wetlands (33 CFR 328.3) under Section 404 of the CWA (30
4 CFR 320-330) and Section 10 of the Rivers and Harbors Act (30 CFR 329).

5 Furthermore EO 11990, *Protection of Wetlands*, requires federal agencies to minimize the
6 destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and
7 beneficial values of wetlands. EO 11990 requires federal agencies to avoid to the extent possible
8 the long- and short-term adverse impacts associated with the destruction or modification of
9 wetlands and to avoid direct or indirect support of new construction in wetlands wherever there
10 is a practicable alternative.

11 3.2.2 EXISTING CONDITIONS

12 ***Fort Hood***

13 Fort Hood occupies 219,000 acres within the central Texas ecoregions of the Edwards Plateau,
14 Cross Timbers, and Southern Tallgrass Prairie.

15 Fort Hood vegetation consists of juniper-oak forest, semi-open shrublands, live oak savannahs,
16 riparian forests, and grasslands. Vegetation within the study area consists of primarily native and
17 planted grasses with some native trees. Native trees removed during construction must be
18 replanted in accordance with the Fort Hood Installation Design Guide (U.S. Army, 2007).

19 Many species of wildlife are found on Fort Hood. Due to ecosystem diversity, wildlife diversity
20 remains high across the installation except for cantonment areas. Cantonment areas have lower
21 diversity, typically urban-adapted species such as bats and foxes. Cantonment and developed
22 areas that comprise the study area of the Proposed Action are not suitable habitat for a wide
23 diversity of animal species (U.S. Army, 2007). There are no wetlands within the project area.

24 Fort Hood has prepared an Endangered Species Management Plan as required by Army
25 Regulation (AR) 200-3. Fort Hood natural resource personnel follow guidelines set in the plan to
26 protect and maintain populations and habitats of federally protected and candidate species on the
27 installation. The cantonment areas, considered to be the study area for the Proposed Action, do
28 not support habitat for threatened or endangered species; however, the Golden-cheeked Warbler
29 habitat is adjacent to the project area and as a result, it and other wildlife are discussed here as
30 part of the potentially affected environment.

31 Table 3.2-1 depicts the Golden-cheeked Warbler habitat near the project site at Fort Hood.

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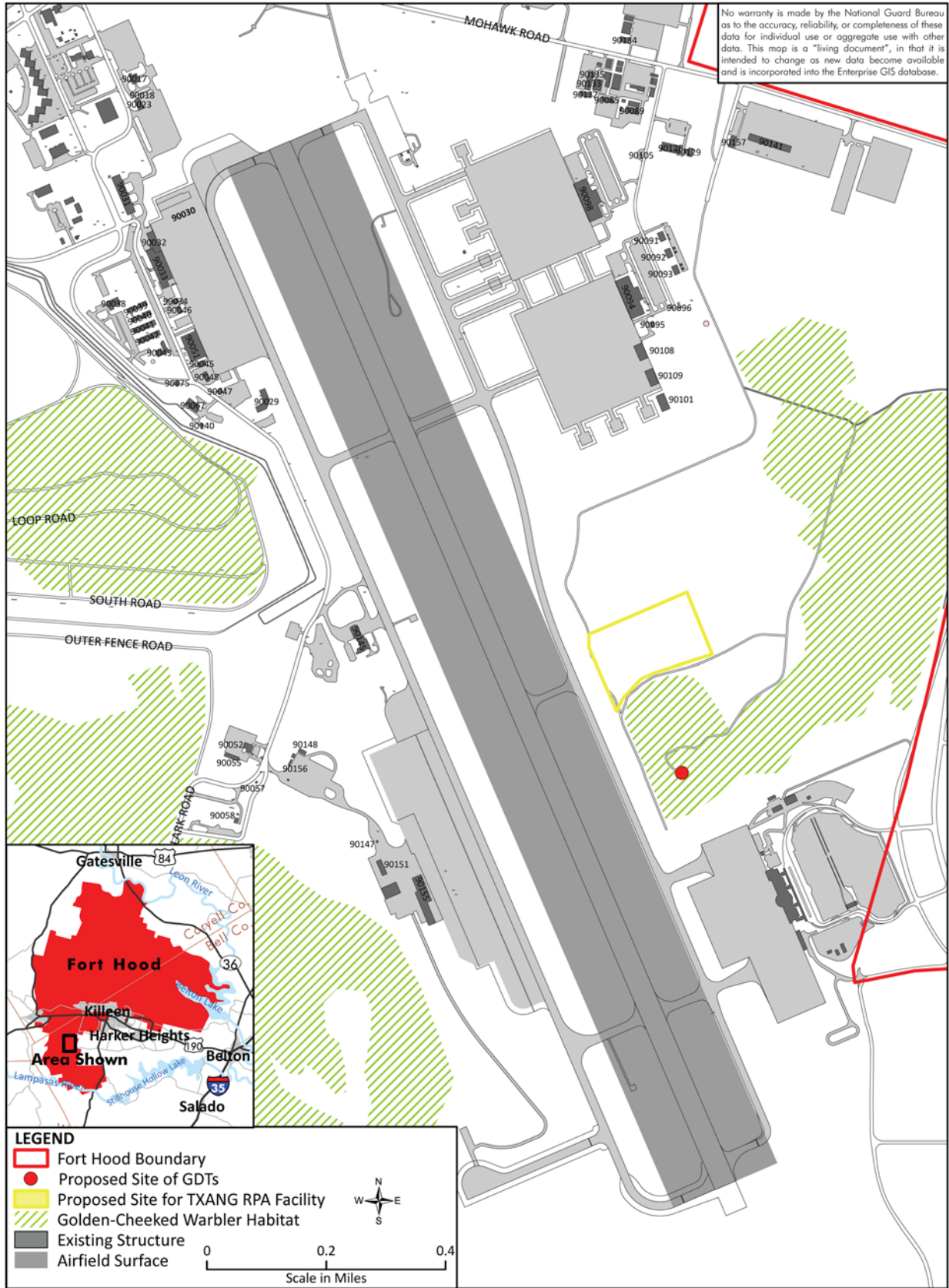


Figure 3.2-1. Golden-cheeked Warbler Habitat near the Project Site at Fort Hood

1

Table 3.2-1. Fort Hood Federally Protected Species

<i>Common Name</i>	<i>Scientific Name</i>	<i>Federal Status</i>	<i>Notes on Occurrence at Fort Hood</i>
Federally Listed Species			
Whooping Crane	<i>Grus americana</i>	Endangered	Recorded on Fort Hood. No evidence of an established population.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Regular or breeding population established.
Black-capped Vireo	<i>Vireo atricapilla</i>	Endangered	
Golden-cheeked Warbler	<i>Dendroica chrysoaparia</i>		
Candidate Species			
Salado Springs Salamander	<i>Eurycea chisholmensis</i>	Candidate	Potential to occur on or near Fort Hood, but no documented occurrence.
Smalleye Shiner	<i>Notropis buccula</i>	Candidate	
Species of Concern			
Texabama Croton	<i>Croton alabamensis</i>	N/A	Regular or breeding population established.
Salamander (new species)	Under taxonomic review	N/A	
Cave-associated species	Multiple species	N/A	
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	N/A	
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	Delisted	Potential to occur on or near Fort Hood, but no documented occurrence.

Source: U.S. Army, 2007

2 **Fort Polk**

3 Researchers have classified Fort Polk natural vegetation into 13 types, plus a disturbed
4 vegetation category that may be applicable to areas closest to the Proposed Action. The 13
5 natural vegetation types are found primarily in the training areas and include pines, hardwoods,
6 grasslands and several types of wetland habitats (U.S. Army, 2004).

7 There are no directly affected vegetated habitats, including wetlands, or wildlife within the Fort
8 Polk study area. All of the Proposed Actions would occur in existing buildings or on existing
9 airfield pavement. Disturbed areas species include annual and nonnative plants such as crabgrass,
10 johnsongrass, Pensacola bahiagrass, morning glory, clovers, horse nettle, and others (U.S. Army,
11 2004). Fort Polk is known to have at least 25 species of threatened and endangered plant species
12 on the installation. However, none are expected to be on or near the study area.

13 Wildlife species on Fort Polk are typical of those found in southwestern Louisiana pinelands.
14 Researchers have tallied several hundred fish, bird and mammal species on the installation (U.S.
15 Army, 2004). Due to the lack of suitable habitat the TXANG does not anticipate wildlife species
16 to occur on or near the study area.

17 3.3 CULTURAL RESOURCES

18 3.3.1 DEFINITION OF RESOURCE

19 Cultural resources may be prehistoric, historic or paleontological. Prehistoric cultural resources
20 pertain to those items from periods prior to recorded history. Historic properties are classified by

1 the NRHP as a district, site, building, structure or object. Paleontological resources, which
2 include fossilized remains of plants and animals, are not strictly cultural resources by definition
3 but are managed similarly (U.S. Army, 2004). The Army manages cultural resources in
4 accordance with the NHPA and U.S. Army regulations.

5 The NHPA of 1966 is the legislation mandating that the federal government preserve historic and
6 prehistoric resources of the U.S. Section 106 of the NHPA explains the obligation of federal
7 agencies, including the military, to “consider effects of undertakings on resources listed in, or
8 eligible for inclusion in the NRHP through a process of consultation” (U.S. Army, 2010b).
9 Compliance with Section 106 consists of identifying cultural resources, evaluating cultural
10 resources for eligibility for listing in the NRHP, determining effects, and resolving adverse
11 effects (U.S. Army, 2010b).

12 In addition to the NHPA the U.S. Army observes AR 200-4 which outlines Army responsibilities
13 to cultural resource legislation as applicable to Army installations, major commands and
14 supporting organizations. Per AR 200-4, Army installations develop, approve and maintain an
15 Integrated Cultural Resource Management Program (ICRMP). Elements of the program are to
16 inventory and evaluate cultural resources, protect, maintain and preserve eligible resources, and
17 integrate mission activities with planning and management of cultural resources (U.S. Army,
18 2004).

19 Historic properties (as defined in 36 CFR 60.4) are important archaeological, architectural, or
20 traditional resources eligible for listing, or listed in, the NRHP. Historic properties are evaluated
21 for potential adverse impacts from an action, as are important traditional resources identified by
22 American Indian tribes or other groups. In 1999, the DoD promulgated its American Indian and
23 Alaska Native Policy, which emphasize the importance of respecting and consulting with tribal
24 governments on a government-to-government basis. The Policy requires an assessment, through
25 consultation, of the effect of proposed DoD actions having the potential to affect protected tribal
26 resources, tribal rights, and Indian lands before decisions are made by the services. In 2006, the
27 DoD implemented Instruction 4710.02, DoD Interactions with Federally-Recognized Tribes,
28 which specified that DoD components will consult with tribes for proposed actions having the
29 potential to “significantly affect protected tribal resources, tribal rights, or Indian lands.”
30 Examples of such actions listed in DoD 4710.02 include, but are not limited to, land-disturbing
31 activities, construction, training and overflights. The instruction specifies that the installation
32 commander will involve tribal governments early in the planning process.

33 The ROI for cultural resources on Fort Hood and Fort Polk consists of those portions of the
34 installation that would be directly affected by ground-disturbing activities and building
35 demolitions and alterations.

3.3.2 EXISTING CONDITIONS

Fort Hood

Fort Hood Cultural Resource Management Program (FHCRM) 1) complies with Army standards and Federal legislation in the management of Fort Hood cultural resources; 2) manages cultural resources according to the BMPs outlined in the ICRMP and HPC; 3) coordinates with installation planners and trainers to eliminate delays to undertakings and training missions; and 4) identifies improvements that can be made in the management process to continue success (Fort Hood, 2010).

Cultural resources at Fort Hood date from prehistoric archeological sites as early as 10,000 B.P. to historic resources from the 20th century. Since 1978 the Fort Hood Cultural Resource Management Program has systematically inventoried cultural resources, identifying 1,109 prehistoric archeological sites and 1,125 historic archeological sites (Fort Hood, 2010).

Prehistoric resources recorded include a sacred Native American site, rock art, mounds and middens, and remains of camps. Historic resources on Fort Hood include 21 pioneer cemeteries, three with two historic buildings, community structures, trash dumps, cattle ranches, and farms, representing 23 rural communities that existed prior to military acquisition in 1942 (Jones, 2010).

None of the known cultural resource or paleontological sites occur on areas proposed for use under the Proposed Action.

Fort Polk

Cultural resources at Fort Polk date from the Paleo-Indian period (15,000 to 11,200 B.P. [years before present]) to the 20th century (U.S. Army, 2010b).

The Army manages cultural resources at Fort Polk based on the eligibility of a resource to be included in the NRHP. The Fort Polk ICRMP, which became effective in 2004, contains the latest information regarding the protection and management of cultural resources on Fort Polk. Potentially eligible sites are typically classified as historic properties, traditional cultural properties, or sacred sites. The Army has surveyed over 168,903 acres and recorded 3,332 sites on Fort Polk and U.S. Forest Service lands used by Fort Polk. Eighteen historic cemeteries and 3,314 archeological sites have been recorded (U.S. Army, 2010b). The majority of archeological sites are prehistoric, with fewer sites categorized as having historic or prehistoric/historic components. The total number of sites includes sites on Forest Service lands managed under the Special Use Permit Agreement, which requires that Fort Polk monitor sites on Intensive Use Area and Limited Use Area lands. All sites on DoD fee-owned and Intensive Use Area lands

1 have been evaluated for the National Register. A total of 129 sites have been determined eligible
2 for the National Register. An additional 127 sites on the Limited Use Area are potentially
3 eligible for the National Register. Both eligible and potentially eligible sites are protected
4 through the implementation of mission restrictions and the classification of the sites as
5 “environmentally sensitive areas.”

6 Paleontological sites and collections, though not strictly classified as cultural resources, are also
7 managed by the Fort Polk cultural resources staff. Fort Polk contains major deposits of Miocene
8 epoch fossils that date from 15 to 13 million years ago (U.S. Army, 2010b). Since 1994, almost
9 4,000 fossilized animal remains have been recovered from two site clusters.

10 3.4 AIRSPACE

11 3.4.1 DEFINITION OF THE RESOURCE

12 Airspace management is defined as the direction, control, and handling of flight operations in the
13 “navigable airspace” that overlies the geopolitical borders of the U.S. and its territories.
14 “Navigable airspace” is airspace above the minimum altitudes of flight prescribed by regulations
15 under USC Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the
16 takeoff and landing of aircraft (49 USC § 40102).

17 Congress has charged the FAA with responsibility for developing plans and policy for the use of
18 the navigable airspace and, assigning by regulation or order, the use of the airspace necessary to
19 ensure the safety of aircraft and its efficient use (49 USC § 40103[b]; FAA Joint Order (JO)
20 7400.2G). Special Use Airspace (SUA) identified by the FAA for military and other
21 governmental activities is charted and published by the National Aeronautical Charting Office in
22 accordance with FAA JO 7400.2G and other applicable regulations and orders. Airspace
23 management considers how airspace is designated, used, and administered to best accommodate
24 the individual and common needs of military, commercial, and general aviation. The FAA
25 considers multiple and sometimes competing demands for aviation airspace in relation to airport
26 operations, Federal Airways, Jet Routes, military flight training activities, and other special
27 needs to determine how the National Airspace System can best be structured to address all user
28 requirements. Specific rules and regulations concerning airspace designation and management
29 are listed in FAA JO 7400.2G. Specific instructions for the operations of RPAs are contained in
30 FAA Order 7610.4K, *Special Operations* and FAA Joint Order 7210.766, *Unmanned Aircraft*
31 *Operations in the National Airspace System*.

32 The ROI for airspace includes airspace in the vicinity of Fort Hood, RGAA, and Fort Polk Army
33 Air Field (AAF) as well as training airspace that would be used by the RPA.

1 3.4.1.1 Airspace Categories

2 Pursuant to its mission to ensure safe and efficient use of navigable airspace, the FAA has
3 defined several airspace categories to accommodate varying types and intensities of flight
4 activity. There are two categories of airspace or airspace areas, regulatory and non-regulatory.
5 Within these two categories, there are four types of airspace, Controlled, Special Use, Other, and
6 Uncontrolled airspace (Class G). Controlled airspace is airspace of defined dimensions within
7 which air traffic control (ATC) service is provided to Instrument Flight Rule (IFR) flights and to
8 Visual Flight Rule (VFR) flights in accordance with the airspace classification (FAA, 2008a).
9 Controlled airspace is categorized into five separate classes: Classes A through E. The airspaces
10 are shown graphically in Figure 3.4-1. Classes A through E identify airspace that is controlled,
11 airspace supporting airport operations, and designated airways affording en-route transit from
12 place-to-place. The classes also dictate pilot qualification requirements, rules of flight that must
13 be followed, and the type of equipment necessary to operate within that airspace. Uncontrolled
14 airspace is designated Class G airspace. Of these classes of airspace only Class A, Class D and
15 Class E airspace are within the ROI.

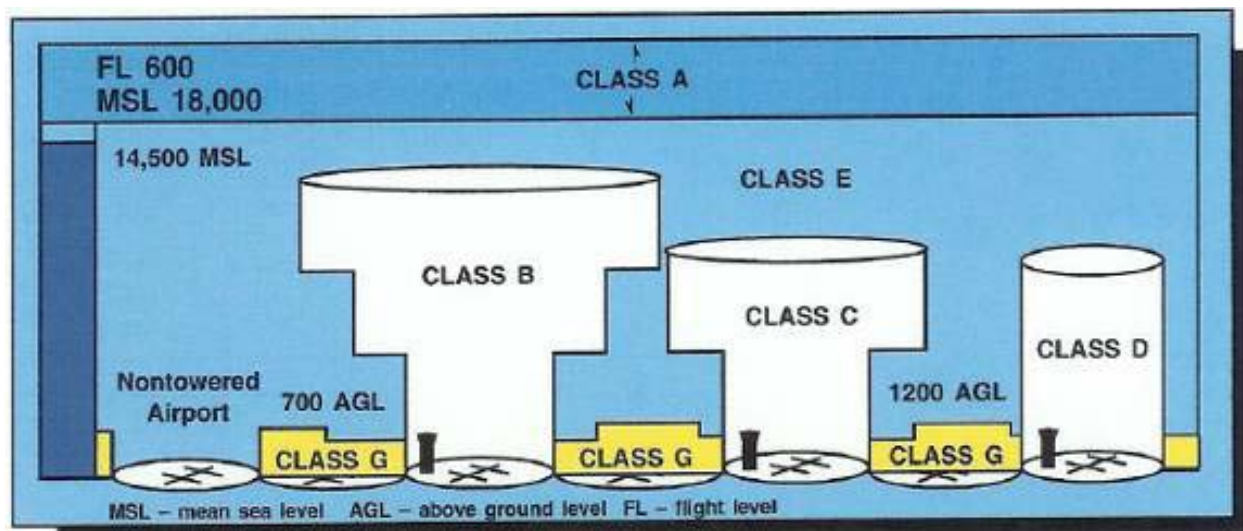


Figure 3.4-1. Controlled Airspace Categories.

16 Class A airspace is generally airspace from 18,000 feet above MSL up to and including Flight
17 Level (FL) 600 (FAA, 2008a). Unless otherwise authorized, all pilots in Class A airspace must
18 operate under IFR at all times. RPA operations are permitted in Class A airspace without
19 airborne or ground-based visual observers, but the RPA pilot must have immediate radio
20 communication with appropriate ATC facilities at all times (FAA, 2008b).

21 Class D airspace, generally, is that airspace from the surface to 2,500 feet above the airport
22 elevation (charted in MSL) surrounding those airports that have an operational control tower.

The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace would normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be designated as Class D or Class E airspace (FAA, 2008a). Within the ROI, RGAA and Fort Polk AAF manage Class D airspace.

Class E airspace is controlled airspace that is not Class A, B, C, or D (FAA, 2008a). Within the ROI, RGAA and Fort Polk AAF manage Class E airspace. In the runway environment, Class E airspace may extend to the surface or begin at either 700 or 1,200 feet Above Ground Level (AGL) as required to safely control flying.

Military Training Airspace

SUA is of defined dimensions wherein activities must be confined because of their nature, and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. SUA includes Prohibited Areas, Restricted Areas (RAs), Military Operations Areas, Warning Areas, Alert areas, Controlled Firing Areas, and National Security Areas. Of these types of SUA, only RAs are within the ROI. An RA is airspace designated under 14 CFR Part 73 that supports ground or flight activities that could be hazardous to non-participating aircraft. In RA airspace, the flight of non-participating aircraft, while not wholly prohibited, is subject to restriction. Most RAs are designated “joint-use” and IFR/VFR operations in the area may be authorized by the controlling Air Route Traffic Control Center (ARTCC) facility when the RA is not being utilized by the using agency (FAA, 2008a). RPAs are permitted to operate in RA without constant monitoring by ground-based or airborne observers.

- **R-6302A/B/C/D/E (Fort Hood).** The four subunits of R-6302 are all contiguous to one another. R-6302A is located approximately four nautical miles north of RGAA, is charted from the surface to 30,000 feet MSL, and is designated for continuous military use. This airspace is contiguous to RGAA Class D airspace. R-6802B is contiguous to R-6802A but is only charted from the surface to 11,000 feet MSL. It is reserved for military use between 6:00 PM and 6:00 AM on Monday through Saturday and can be reserved at other times using the Notice to Airman (NOTAM) system. R-6302C and D are located to the west of R-6302A and are charted from the surface to 30,000 feet MSL. These two airspace units are both scheduled from 7:00 AM to 7:00 PM on Monday through Friday and can be scheduled at other times using the NOTAM system.
- **R-3804A/B (Fort Polk).** R-3804B overlies Fort Polk AAF and is charted from the surface to 3,000 feet MSL. R-3804A is contiguous to R-3804B and lies to the east of R-3804B. R-3804A is charted from the surface to 18,000 feet MSL. Both RAs are designated for continuous military use.

1 Military Training Routes (MTRs) are flight corridors developed and used by the DoD to practice
2 high-speed, low-altitude flight, generally below 10,000 feet MSL. Specifically, MTRs are
3 airspace of defined vertical and lateral dimensions established to conduct military flight training
4 at airspeeds in excess of 250 knots indicated airspeed (KIAS) (FAA, 2008a). MTRs are
5 developed in accordance with criteria specified in FAA JO 7610.4M (DoD, 2009). They are
6 described by a centerline (often with defined horizontal limits on either side of the centerline)
7 and vertical limits expressed as minimum and maximum altitudes along the flight track. MTRs
8 are identified as VFR Military Training Routes (VRs), Instrument Flight Rule Military Training
9 Routes (IRs), or Low Speed Altitude Routes (SRs). VRs are used under VFR conditions while
10 IRs are navigated using instruments and may be flown in IFR conditions. SRs are similar to VRs
11 in that use is only permitted under VFR conditions, but differ from VRs in that SRs do not
12 permit flight at greater than 250 knots. VR-186 and VR-101 terminate within R-6302 after
13 entering the airspace unit from the west. VR-1110 terminates at the northern boundary of R-
14 6302D. SR-258 terminates just inside the northern boundary of R-6302D, and SR-261 originates
15 and terminates just inside the northern boundary of R-6302D. No MTRs pass through or
16 terminate at R-3804.

17 The airspace proposed for use is managed by the United States Army. Specifically, R-
18 6302A/B/C/D/E and R-3804A/B are scheduled by Fort Hood and Fort Polk, respectively. The
19 Army manages airspace in accordance with processes and procedures detailed in AR 95-2,
20 *Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control, and Navigational Aids*. AR
21 95-23, *Unmanned Aircraft System Flight Regulations* regulates RPA operations and flight rules
22 as well as minimum crewmember qualifications. DoD Directive 5030.19, *DoD Responsibilities*
23 *on Federal Aviation and National Airspace System Matters*, addresses the development and
24 processing of SUA, and covers aeronautical matters governing the efficient planning, acquisition,
25 use, and management of airspace required to support military flight operations.

26 Range management involves the development and implementation of processes and procedures
27 required by Army Regulation 385-63, *Range Safety*, to ensure that Army ranges are planned,
28 operated, and managed in a safe manner, that all required equipment and facilities are available
29 to support range use, and that proper security for range assets is present. The focus of range
30 management is on ensuring safe, realistic live fire training to enable Army personnel to train as
31 they fight. Ranges are designed and used, to the extent practical, to minimize both potential
32 explosive hazards and harmful environmental impacts, and to promote resource recovery and
33 recycling.

34 ***Victor Airways***

35 Victor Airways are designated “highways in the sky” used by aircraft to transit between defined
36 locations. Victor Airways are designated on aeronautical charts with the letter “V” (hence

Victor). Victor Airways are Class E airspace extending from 1,200 feet AGL to FL180. The width of the Victor corridor is usually four nautical miles on each side of the centerline, for a total width of eight nautical miles. No Victor airways are located within the ROI.

Jet Routes

Jet routes are similar to Victor Airways, but are designated at altitudes between FL180 and FL450. No jet routes are located within the ROI.

3.4.2 EXISTING CONDITIONS

3.4.2.1 Class D/E Airspace at RGAA (Fort Hood)

RGAA accommodates approximately 51 sorties and 81 closed patterns per average busy flying day (USACHPPM, 2008). In addition to supporting a wide variety of fixed- and rotary-wing manned aircraft, the installation also supports the operations of RPA aircraft including the MQ-5 Hunter and the RQ-7 Shadow. Hunter RPA flying operations are conducted as per the requirements of a COA whereas the operation of smaller RPA aircraft such as the Shadow do not require a COA. The COA for operation of the Hunter RPA covers operations in RGAA Class D airspace and adjacent Class E airspace in order to transit between RGAA and R-6302. It specifies several provisions that must be met during all Hunter RPA flight operations. Some of the most critical provisions of the COA are listed below.

- Qualified airborne or ground-based visual observers must visually track RPA flight when it is not within R-6302;
- A person must monitor the air traffic control radar “DBRITE” display to ensure that no manned aircraft is approaching the controlled airspace without making radio contact;
- Pilots and observers must meet minimum proficiency requirements which are specific to flying under VFR and IFR conditions;
- Specific procedures must be followed to minimize risks in the instance that the data link to the RPA is lost;
- Only one RPA may operate within RGAA Class D airspace at a time;
- No civil traffic may be in the airport traffic pattern while an RPA is in the pattern;
- A NOTAM must be issued between 48 hours and 72 hours prior to when RPA operations are to be conducted, specifying time and nature of the activity.

3.4.2.2 Class D/E Airspace at Fort Polk AAF

Fort Polk AAF supports approximately 10 sorties and 35 closed pattern operations per average busy flying day, including several types of rotary- and fixed-wing aircraft. COAs are in effect at Fort Polk AAF that regulate the operations of RPAs. The COAs are similar, in terms of safety-related operational restrictions on RPA operations, to the COA which is in place at RGAA.

R-6302A/B/C/D/E

R-6302A, R-6302C and R-6302D are often used together, but R-6302B is used for a separate and unique set of training events. A map depicting R-6302A/B/C/D/E can be found at . R-6302A/C/D is utilized by a wide variety of military units conducting training in close-air-support, bombing, strafing, laser, surveillance, photo missions, and Research and Development (R&D), and logistic support (Fort Polk, 2008). Types of aircraft that use R-6302A/C/D for training include the AH-64, C-130, CH-47, F-16, F-18, UH-1, UH-60, MQ-5/RQ-5, RQ-7, and RQ-11. Non-RPA Army aircraft are the primary users of R-6302A conducting 40,385 of the 41,602 total sortie operations in FY 2009. RPAs conducted 1,147 sortie operations in FY 2009 and other users accounted for 70 sorties. R-6302A was not returned to the controlling agency at all in FY 2009 but R-6302C and R-6302D were returned to the controlling agency for 8,533 hours and 8,353 hours, respectively in FY 2009. R-6302B is utilized for aircraft-conducted surveillance and proficiency training. Eight sorties were flown in the area in FY 2009 by MQ-5/RQ-5 and RQ-7 aircraft, and area was returned to the controlling agency for 8,747 hours out of 8,760 total hours in a year. R-6302E was not used during FY 2009. The low number of sorties flown in this airspace unit is expected to be temporary, and is expected to increase as units return from currently ongoing combat operations.

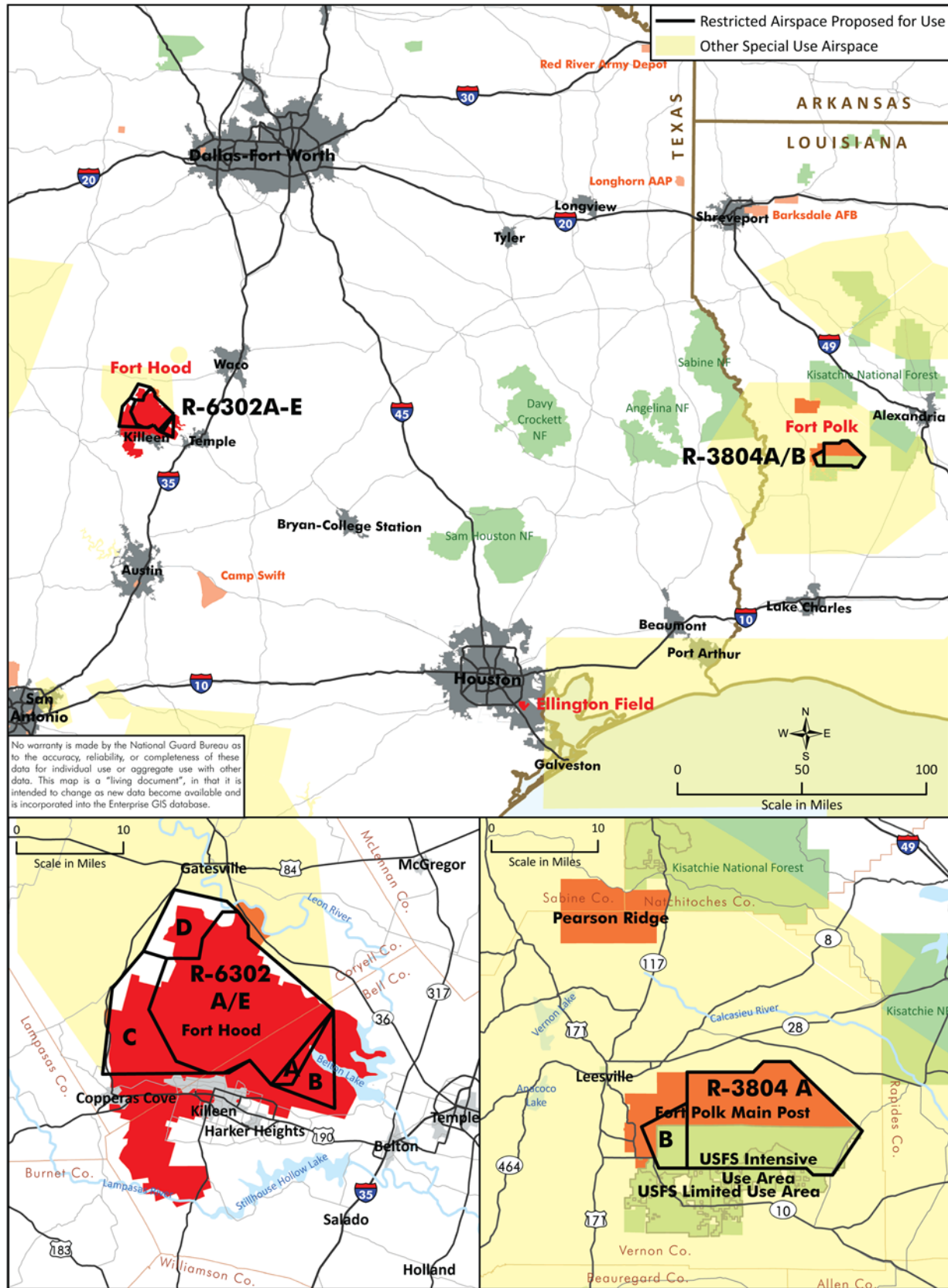
Table 3.4-1. R-6302 A/B/C/D/E Utilization in Fiscal Year 2009

<i>Restricted Area</i>	<i>Hours Scheduled</i>	<i>Hours Used</i>
R-6302A	8,760	8,760
R-6302B	3,756	13
R-6302C	3,132	227
R-6302D	3,132	407
R-6302E	0	0

Source: Fort Hood 2009

R-3804A/B

R-3804A/B, also depicted in , is utilized by a wide variety of military units conducting training in Close Air Support, Aerial Gunnery, Air-to-Ground Munitions Delivery, Close Air Support, Night-Vision Goggle use, Nap-of-the-Earth Flying, and Ground-to-Air Munitions Use (Fort Polk, 2008). Types of aircraft that use the airspace for training include the A-10, F-15, F-16, F/A-18, B-1, B-2, B-52, GR-4, GR-7, AH-1, AH-6, and AH-64. The most frequent users of R-3804 are helicopters, which typically operate at altitudes below 2,000 AGL.



Ground-based units train in the use of a variety of ground-to-air and ground-to-ground munitions including, but not limited to 155 mm Howitzer, TOW missiles, and Stinger missiles. In addition, a variety of lasers and targets are used. Each munitions training event is associated with a specific vertical and danger zone which must be certified as clear before munitions training can begin. The airspace was returned to the controlling agency for 7,913 hours in Fiscal Year 2008.

R-3804B is used primarily for ground-based munitions training including training in the use of anti-tank rockets, small-arms, and demolition charges. R-3804B is not normally used for aircraft training activities. Rather, the airspace is reserved to avoid non-participating aircraft entering danger zones associated with munitions training.

Table 3.4-2. R-3804A/B Utilization in Fiscal Year 2008

<i>Restricted Area</i>	<i>Hours Scheduled</i>	<i>Hours Used</i>
R-3804A	8,784	871
R-3804B	8,784	4,739

Source: Fort Polk 2008

3.5 NOISE

3.5.1 DEFINITION OF RESOURCE

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses (e.g., housing tracts or industrial plants). Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flight tracks around airports), or randomly. There is wide diversity in responses to noise that, not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal). The ROI for noise includes the areas in the vicinity of the airfields and RA airspace proposed for use as part of training.

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the ear drum. This may be likened to the ripples in water that would be produced when a stone is dropped into it. As the acoustic energy increases, the intensity or amplitude of these pressure waves increase, and the ear senses louder noise. The unit used to measure the intensity of sound is the decibel (dB). Sound intensity varies widely (from a soft whisper to a jet engine) and is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies

1 dealing with very large and very small numbers. For example, the logarithm of the number
2 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). Obviously, as more
3 zeros are added before or after the decimal point, converting these numbers to their logarithms
4 greatly simplifies discussions that use these numbers. As a basis for comparison when noise
5 levels are considered, it is useful to note that at distances of about three feet, noise from normal
6 human speech ranges from 63 to 65 dB, operating kitchen appliances range from about 83 to 88
7 dB, and rock bands approach 110 dB.

8 Because decibels are logarithmic, two noise sources cannot be added arithmetically. When two
9 noise sources of equal amplitude are added, the total noise level increases by 3 dB. As the
10 difference between two noise levels increases, the louder noise level dominates while the quieter
11 noise is “drowned out”. When one noise level is 10 dB greater than another to which it is being
12 added, the combined noise level is less than one tenth of one dB greater than the louder of the
13 two noises alone.

14 The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement
15 reflects the number of times per second the air vibrates from the acoustic energy. Low frequency
16 sounds are heard as rumbles or roars, and high frequency sounds are heard as screeches. Sound
17 measurement is further refined through the use of “A-weighting.” The normal human ear can
18 detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, all sounds
19 throughout this range are not heard equally well. Therefore, through internal electronic circuitry,
20 some sound meters are calibrated to emphasize frequencies in the 1,000 to 4,000 Hz range. The
21 human ear is most sensitive to frequencies in this range, and sounds measured with these
22 instruments are termed “A-weighted.” Throughout this document, dB levels can be assumed to
23 be A-weighted.

24 The duration of a noise event, and the number of times noise events occur, are also important
25 considerations in assessing noise impacts. The durations of sounds are accounted for using a
26 variety of different noise “metrics.” The word metric is used to describe a standard of
27 measurement. As used in environmental noise analysis, there are many different types of noise
28 metrics. Each metric has a different physical meaning or interpretation, and each metric was
29 developed by researchers attempting to represent the effects of environmental noise.

30 3.5.1.1 Maximum Sound Level

31 Maximum sound level (L_{\max}) is the highest sound level measured during a single noise event
32 (e.g., an aircraft overflight), and is the sound actually heard by a person on the ground. For an
33 observer, the noise level starts at the ambient noise level, rises up to the maximum level as the
34 aircraft flies closest to the observer, and returns to the ambient level as the aircraft recedes into
35 the distance. The maximum sound level is an intuitively understood metric because it represents

the sound level heard on the ground. The program SELCALC was used to estimate noise levels generated by a single aircraft overflight. SELCALC derives noise level estimates from a database of field-recorded aircraft overflight noise measurements.

3.5.1.2 Day-Night Average Sound Level

The number of times noise events occur during given periods is also an important consideration in assessing noise impacts. The Day-Night Average Sound Level (DNL) sums the individual noise events and averages the resulting level over a specified length of time. Thus, it is a composite metric which considers the maximum noise levels, the duration of the events, the number of events that occur, and the time of day during which they occur. This metric adds 10 dB to those events that occur between 10:00 p.m. and 7:00 a.m. to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the day time. This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

The DNL noise metric is the preferred noise metric of the Department of Housing and Urban Development, the Department of Transportation, the FAA, the USEPA, and the Veteran's Administration. Ignoring the night-time penalty for the moment, DNL may be thought of as the continuous or cumulative A-weighted sound level which would be present if all of the variations in sound level which occur over the given time period were smoothed out so as to contain the same total sound energy. While DNL does provide a single measure of overall noise impact, it is fully recognized that it does not provide specific information on the number of noise events or the specific individual sound levels that occur. For example, a DNL of 65 dB could result from very few noisy events, or a large number of quieter events. Scientific studies and social surveys have found DNL to be the best measure to assess levels of community annoyance associated with all types of environmental noise. Therefore, its use is endorsed by the scientific community and governmental agencies (ANSI, 1980, 1988; USEPA, 1974; FICUN, 1980; FICON, 1992). The metric DNL_{mr} is a slightly modified version of DNL that incorporates a penalty of up to 11 dB for overflight noise events where the noise arises suddenly, potentially causing a startling reaction. DNL_{mr} correlates to human annoyance in a manner similar to DNL.

Public annoyance is the most common concern associated with exposure to elevated noise levels. When subjected to DNL levels of 65 dB, approximately 12 percent of the persons exposed will be "highly annoyed" by the noise. At levels below 55 dB, the percentage of annoyance is substantially lower (less than 3 percent), and at levels above 70 dB it is substantially higher (greater than 25 percent) (Finegold *et al.*, 1994). Table 3.5-1 shows the percentage of the population expected to be highly annoyed at a range of noise levels.

Table 3.5-1. Percentage of Population Highly Annoyed By Elevated Noise Levels

<i>Noise Exposure (dB DNL)</i>	<i>Percent Highly Annoyed</i>
< 65	< 12
65 – 70	12 – 21
70 – 75	22 – 36
75 – 80	37 – 53
80 – 85	54 – 70
> 85	> 71

dB - decibel

DNL - Day-Night Average Sound Level

Source: Finegold *et al.* 1994.

Potential noise impacts to humans other than annoyance include hearing loss and non-auditory health impacts such as hypertension, cardiovascular disease, and other nervous disorders. Populations exposed to noise of 80 dB DNL or greater over a long time-period are at the most risk of noise-induced hearing loss (Undersecretary of Defense, 2009). Non-auditory human health impacts have not been shown to occur at noise levels below the level necessary to induce to induce hearing loss (von Gierke, 1990).

3.5.2 EXISTING CONDITIONS

The ROI for the Proposed Action includes the areas near the Fort Hood and Fort Polk airfields as well as areas beneath the RA airspace that would be used for Predator flight training operations. Predator aircraft operating at Fort Hood would utilize R-6302A/B/C/D/E and the Predator aircraft operating from Fort Polk would utilize R-3804A/B.

Fort Hood (RGAA and R-6302A/B/C/D/E)

RGAA is an active joint-use airfield and supports both military and civilian aircraft operations. Several types of civilian aircraft emplane and de-plane passengers at RGAA. Military aircraft based at RGAA include H-64, C-12, H-47, Learjet-25, and H-60. Table 3.5-2 shows L_{max} values associated with each of these types of aircraft in takeoff configuration at a distance of 1,000 feet.

Table 3.5-2. Maximum Sound Levels for Military Aircraft Based at RGAA

<i>Aircraft (in takeoff configuration)</i>	<i>L_{max} (dB) at Varying Distances (Feet)</i>			
	500	1,000	2,000	5,000
H-64	83.1	76.4	64.6	58.4
C-12	79.4	73.2	62.7	57.4
H-47	80.1	73.2	60.9	54.3
Learjet-25	112.5	105.5	92.0	84.8
H-60	78.9	72.0	59.6	52.7

Notes: dB – decibel

L_{max} – Maximum Sound Levels

Source: SELCALC computer program

1 RGAA supports approximately 51 sorties and 81 closed pattern operations per average busy
2 flying day (USACHPPM, 2008). A sortie is defined as an aircraft departing from and returning
3 to the airfield. A closed pattern operation entails the aircraft lifting off from the airfield and then
4 engaging in a set of maneuvers to end up landing again at the same airfield. Detailed aircraft
5 operations data have been gathered to reflect an average busy flying day at RGAA. This data was
6 entered into the computer model NOISEMAP to generate DNL noise contours. Noise contours
7 for baseline conditions at RGAA are shown at Figure 3.5-1. Under baseline conditions, 5,686
8 acres are impacted by noise levels greater than 65 dB DNL.

9 While aircraft noise is the dominant noise source in the vicinity of RGAA, there are several
10 ground-based noise sources as well. These ground-based noises are typically concentrated near
11 the flightline and include industrial sounds (e.g. generators, HVAC units, etc.) and automotive
12 traffic noise. In calculating noise levels, louder sounds dominate. Because aircraft flying
13 operations are typically much louder than ground operations in this area, ground operations are
14 not included in calculations of overall noise near the airfield.

15 The ground area beneath RA R-6302A/B/C/D/E includes the Fort Hood Range and privately-
16 owned lands. The privately-owned lands are primarily rural, but include some developed areas.
17 Ambient noise levels in undeveloped rural areas have been found to be approximately 35 dB,
18 whereas noise levels in suburban areas are typically 45-50 dB DNL (USEPA, 1982). The U.S.
19 Army conducts a number of training exercises on the Fort Hood Range including air-to-ground
20 and ground-to-ground live-fire munitions training. During training events, noise levels on and
21 near the range may be high as a result of munitions firing, munitions detonations, and operation
22 of vehicles.

23 ***Fort Polk (R-3804A/B)***

24 Fort Polk AAF also supports a wide variety of aircraft types, primarily consisting of military
25 rotary-wing aircraft. Military aircraft based at Fort Polk AAF include H-64, C-12, C-130, H-47,
26 OH-58, OH-58D, H-60, and H-1 aircraft. L_{max} noise levels associated with overflight of these
27 aircraft types at various altitudes are shown in Table 3.5-3.

28 On an average busy flying day, approximately 10 sorties and 35 closed pattern operations are
29 flown at Fort Polk AAF (Broska, 2009). Detailed data reflecting aircraft operations on an
30 average busy flying day were entered into the computer program NOISEMAP to yield DNL
31 noise contours, which are displayed at Figure 3.5-2. Under baseline conditions, 468 acres are
32 impacted at noise levels greater than 65 dB DNL.

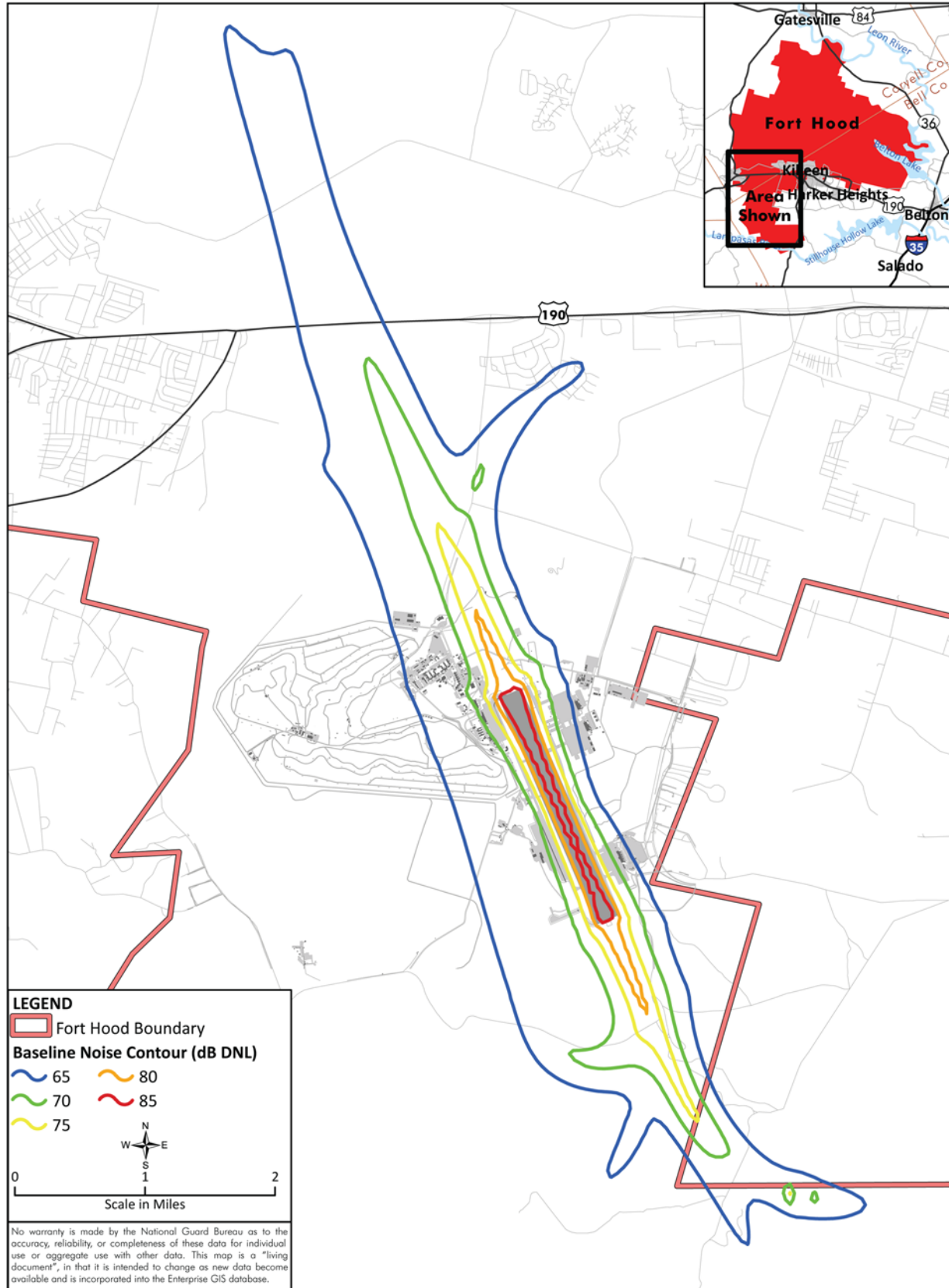


Figure 3.5-1. Baseline Noise Contours at RGAA

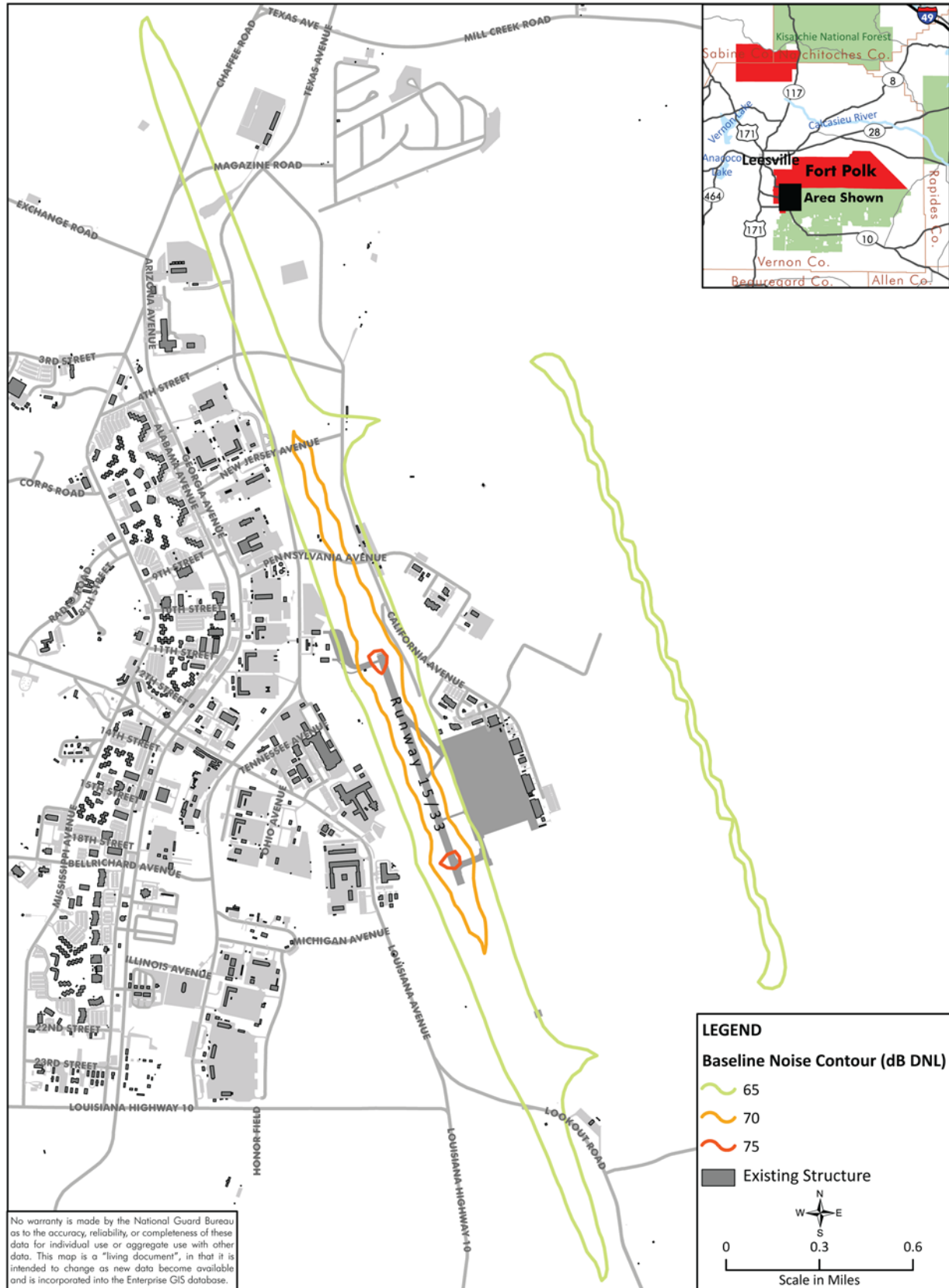


Figure 3.5-2. Baseline Noise Level at Fort Polk AAF

Table 3.5-3. Maximum Sound Levels for Military Aircraft Based at Fort Polk AAF

<i>Aircraft (in takeoff configuration)</i>	<i>L_{max} (dB) at Varying Distances (Feet)</i>			
	500	1,000	2,000	5,000
H-64	83.1	76.4	64.6	58.4
C-12	79.4	73.2	62.7	57.4
C-130	91.5	84.6	72.5	66.3
H-47	80.1	73.2	60.9	54.3
OH-58	76.4	69.8	58.4	52.3
OH-58D	79.7	72.9	60.7	54.0
H-60	78.9	72.0	59.6	52.7
H-1	82.8	76.4	65.6	60.2

dB – decibel

L_{max} – Maximum Sound Levels

Source: SELCALC computer program

Fort Polk is an active military base and ground-based operations are another source of noise near the AAF. However, these noises are typically much less loud than aircraft operations and are not included in the calculation of DNL noise levels.

The ground area beneath R-3804A/B includes the Fort Polk Training Range. Military training in R-3804 includes a variety of air and ground vehicle training as well as live munitions training. Noise levels beneath the airspace vary from day-to-day depending on the types of vehicles being used and the types of munitions being used.

3.6 SAFETY

This section addresses flight and ground safety associated with MQ-1 Predator RPA training operations conducted by the 147 RW.

3.6.1 DEFINITION OF THE RESOURCE

Flight safety considers RPA flight risks. Ground safety considers issues associated with facility construction/renovation, operations and maintenance activities that support base operations, including fire response and operations, at Fort Hood, Texas and Fort Polk, Louisiana.

3.6.1.1 Significance Criteria

Ground and flight safety involving RPA operations are addressed in this section. Within the ground safety section, issues involving operations and maintenance activities that support operation of the airfields are addressed. Also considered in this section is the safety of personnel and facilities on the ground that may be placed at risk from flight operations. Within the flight safety section, RPA flight risks and safety issues associated with the conduct of aviation activities at the installation are addressed. Although ground and flight safety are addressed independently, it should be noted that, in the immediate vicinity of the runway, risks associated

1 with safety-of-flight issues are interrelated with ground safety concerns. Any RPA accident at the
2 airfield would have direct impacts on the ground in the immediate vicinity of the mishap as a
3 result of explosion/fire, and debris spread.

4 The safety ROI encompasses RPA maintenance and operational areas at Fort Hood and Fort
5 Polk.

6 3.6.1.2 Methodology

7 Numerous federal, civil, and military laws and regulations govern operations at Fort Hood and
8 Fort Polk and in the surrounding airspace. Individually and collectively they prescribe measures,
9 processes, and procedures required to ensure safe operations and to protect the public, military,
10 and property.

11 The elements of the proposal that have a potential to affect safety are evaluated relative to the
12 degree to which the action increases or decreases safety risks to the public or private property.
13 Ground, fire, and RPA safety are assessed for the potential to increase risk and the capability to
14 manage that risk by responding to emergencies. Analysis of flight safety data and reliability
15 studies for RPA operations take into account the reliability of these systems and potential
16 accident risks.

17 The Air Force defines four categories of aircraft mishaps: Classes A, B, C, and High Accident
18 Potential (HAP). Class A accident is an accident that results in a fatality or total permanent
19 disability, loss of an aircraft, or property damage of \$2 million or more. Class B mishaps result in
20 total costs of more than \$500,000, but less than \$2,000,000, or result in permanent partial
21 disability, but they do not result in fatalities. Class C mishaps involve costs of more than
22 \$50,000, but less than \$500,000, or a loss of worker productivity of more than 8 hours. HAP
23 represents minor incidents not meeting any of the criteria for Classes A, B, or C. .

24 3.6.2 EXISTING CONDITIONS

25 3.6.2.1 Flight Safety

26 The use of RPA, like other aviation technologies, poses a potential harm to the general public.
27 This potential harm is measured by the metric of risk, which is defined as both the “likelihood of
28 an accident, and the severity of the potential consequences.” While RPA share inherent
29 characteristics with other aircraft, RPA accidents differ fundamentally from other aviation
30 accidents. Generally, historic RPA accidents have been shown to be attributed to three major
31 causes: human, material, and communication factors. Human-related factors are the most
32 common.

There are several differentiating factors in design and operation between military and civil aircraft that can confound a direct comparison of accident rates. RPA accident rates have been decreasing rapidly since the introduction of modern RPA operations in U.S. military service in 1987 and with more experienced RPA pilots flying missions. A projection of the current trend would cause RPA to approach the current accident rates in general aviation and manned military aviation. Further discussion of RPA mishaps and accident rates is contained in Section 4.10.

3.6.2.2 Airfield Environment

Fort Hood (RGAA)

Fort Hood/RGAA currently operates Army RPAs. The runway length of 10,000 ft well exceeds Predator basing criteria runway length minimums of 5,000 feet.

Clear Zones (CZs) and Accident Potential Zones (APZs) at the airfield are surface areas described geographically on the ground. Specific dimensions, geophysical and topographic standards, and approved land uses are discussed in detail in UFC 3-260-01, Airfield and Heliport Planning and Design. Each zone represents a decreasing risk in the chance that an accident would occur in the zone.

The CZ is a square that is 3,000 feet long and 3,000 feet wide at both ends of the runway (extends 3,000 feet out from the end of the runway and 1,500 feet on either side of the runway centerline). UFC 3-260-01 dictates that within the CZ (and outside of the Graded Area), there can be no permanent facilities. Brush and trees are allowed in this area; however, they may not penetrate the approach/departure slope, or the Transitional Surface slope.

Within the CZ is a smaller Graded Area. The Graded Area is 1,000 feet in length and 2,000 feet wide; it extends 1,000 feet from the end of the runway and 1,000 feet on either side of the runway centerline. UFC 3-260-01 dictates that the Graded Area must be clear of all aboveground obstacles (including roadbeds) and vegetation (except grass [herbaceous]). It must also have no abrupt surface irregularities, such as ditches or ponds. The maximum allowable slope of the Graded Area is +/- 2 percent.

The APZ is divided into APZ I and APZ II. APZ I is a rectangle 3,000 feet in width that extends 5,000 feet from the end of the CZ. APZ II extends an additional 7,000 feet beyond the end of APZ I. If an RPA accident were to occur during take-off or landing within the airfield environment it would most likely happen within the CZ and APZ I at RGAA and Fort Polk AAF.

Fort Polk AAF

Runway 33 is used approximately 90 percent of the time. Standard departures from the airfield follow the runway heading approximately 5 miles to the north and then turn into the Restricted Area.

The runway is only 3,900 feet long (4,100 feet with the displaced thresholds) and does not meet the minimum requirement of 5,000 feet for Predator operations. The airfield also does not meet all of the design criteria specified in the UFC for Airfield/Heliport Design. However, the airfield has been “Grandfathered,” and no safety waivers are in effect.

Two other restricted areas are located in the Fort Polk airspace complex. They can be accessed by climbing into the Class A airspace (18-21K Lancer ATCAA) and transitioning between the restricted areas. A COA from the FAA is required to fly RPA in Class A airspace. A COA must be obtained from the FAA to transition between the restricted areas below 18,000 feet in the Warrior MOA. A chase aircraft operation may be required as part of the COA submitted to the FAA for operations outside of any RAs.

3.6.2.3 Bird/Wildlife Aircraft Strike Hazards

Fort Hood (RGAA) and Fort Polk AAF

Bird/wildlife-aircraft strike hazards (BASH) constitute a safety concern because they can result in damage to aircraft or injury to aircrews or local human populations if an aircraft crashes. Aircraft may encounter birds at altitudes up to 30,000 feet MSL or higher. However, most birds fly closer to the ground. More than 97 percent of reported bird strikes occur below 3,000 feet AGL. Approximately 30 percent of bird strikes happen in the airport environment, and almost 55 percent occur during low-altitude training (USAF, 2011). The remainder (approximately 15 percent) occur at a range of altitudes and varied conditions of flight.

Migratory waterfowl (e.g., ducks, geese, and swans) are the most hazardous birds to low-flying aircraft because of their size and their propensity for migrating in large flocks at a variety of elevations and times of day. Waterfowl vary considerably in size, from one to two pounds for ducks, five to eight pounds for geese, and up to 20 pounds for most swans. There are two normal migratory seasons, fall and spring. Waterfowl are usually only a hazard during migratory seasons. These birds typically migrate at night and generally fly between 1,500 to 3,000 feet AGL during the fall migration and from 1,000 to 3,000 feet AGL during the spring migration.

In addition to waterfowl, raptors, shorebirds, gulls, herons, songbirds, and other birds also pose a hazard. In considering severity, the results of BASH in RAs on ranges show that strikes involving raptors result in the majority of Class A and Class B mishaps related to BASH.

Raptors of greatest concern in the ROI are vultures and Red-tailed Hawks. Peak migration periods for raptors, especially eagles, are from October to mid-December and from mid-January to the beginning of March. In general, flights above 1,500 feet AGL would be above most migrating and wintering raptors. Songbirds are small birds, usually less than one pound. During nocturnal migration periods, they navigate along major rivers, typically between 500 to 3,000 feet AGL. The potential for bird/wildlife-aircraft strikes is greatest in areas used as migration corridors (flyways) or where birds congregate for foraging or resting (e.g., open water bodies, rivers, and wetlands).

While any bird/wildlife-aircraft strike has the potential to be serious, many result in little or no damage to the aircraft and only a minute portion result in a Class A mishap. During the years 1985 to 2004, the Air Force BASH Team documented 59,156 bird strikes worldwide. Of these, five resulted in Class A mishaps where the aircraft was destroyed. These occurrences constituted approximately 0.04 percent of all reported bird/wildlife-aircraft strikes (USAF, 2011).

3.6.2.4 Ground Safety

Fort Hood and Fort Polk

Ground safety includes many categories consisting of ground and industrial operations, operational and occupational safety hazards, motor vehicles use, off-duty military and maritime activities, and fire. Ground mishaps can occur on ground or water, on or off an installation, and may involve Air Force personnel, contractors, and property losses. They can occur in a work environment from the use of equipment or materials including administrative, supply, custodial, and maintenance for Air Force functions.

3.6.2.5 Frequency

The use of the electromagnetic frequency spectrum for military communication purposes is tightly controlled from the DoD level down to individual ranges and installations. Regulations outlining DoD policy for RF communications management include, but are not limited to:

- DoD Directive 4650.1 - Management and Use of the Radio Frequency Spectrum;
- DoD Directive 3222.3 - DoD Electromagnetic Compatibility Program;
- National Telecommunications and Information Administration - Manual of Regulations and Procedures for Federal Radio Frequency Management; and
- Combined Communications-Electronics Board Allied Communications Publications 190(C) - Guide to Spectrum Management in Military Operations (applicable to joint operations among deployed member nations).

Air-to-ground communications utilized for RPA operations consist of radio guidance and control for the RPA systems. RPA operations utilize frequencies ranging from 112 to 400 megahertz (MHz) and between .225 to .400 gigahertz (GHz).

3.7 HAZARDOUS MATERIALS AND WASTES

The analysis will address hazardous materials utilized and waste generated from the maintenance of the aircraft. No activities involving the demolition or renovation of existing structures would occur under the Proposed Action at either installation; therefore, there are no potential impacts from asbestos containing material or lead based paint, and these materials are not further discussed. Additionally, construction of the small concrete pads would avoid Installation Restoration Program sites and would be coordinated with the Directorate of Public Works (DPW) at each installation; therefore, no impacts are anticipated from the presence of ERP sites. However, should any unusual odor, soil, or groundwater coloring be encountered during construction activities in any area, the DPW at the installation would be contacted immediately.

3.7.1 DEFINITION OF THE RESOURCE

3.7.1.1 Hazardous Materials/Waste

Hazardous materials listed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA) are defined as any substances that, due to quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health, welfare, or the environment. Examples of hazardous materials include petroleum products/fuels and paint-related products.

Hazardous *wastes* listed under the Resource Conservation and Recovery Act (RCRA) are defined as any solid, liquid, or contained gaseous or semisolid waste, or any combination of wastes that pose a substantive present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Other federal regulations which apply to hazardous materials/waste include the Toxic Substances Control Act, Community Environmental Response Facilitation Act, Federal Facilities Compliance Act, Hazardous Materials Transportation Act, Pollution Prevention Act, EO 12088, *Federal Compliance with Pollution Control Standards*, and EO 12856, *Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements*.

Solid Waste

Solid waste is any sludge (unregulated by the federal CWA or CAA), garbage, rubbish, refuse, special waste, or other discarded material resulting from domestic, industrial, commercial, mining, agricultural, or government activities. Solid waste includes wastes commonly referred to as municipal solid wastes (such as garbage and refuse) and construction and demolition (C&D) debris, which consists of discarded materials generally not soluble in water (steel, glass, brick, concrete, asphalt, etc.).

3.7.2 EXISTING CONDITIONS

3.7.2.1 Hazardous Materials/Waste Management

Fort Hood

Annually, Fort Hood receives letters of praise and accolades from the Texas Department of Health for their excellent job in controlling toxic and hazardous substances. Maintenance support and specialized flight support operations currently use large quantities of hazardous materials. These materials primarily consist of aviation fuel, ground vehicle fuel, lubricants, hydraulic fluids, antifreeze, degreasers and solvents, chemical batteries, cleaning materials and paint-related materials. These hazardous materials are used and temporarily stored at locations throughout the Fort Hood cantonment area, airfields, training areas, and live-fire area.

Hazardous materials are managed in accordance with AR 200-1, *Environmental Protection and Enhancement* (December 2007) for the purpose of minimizing hazards to public health and damage to the environment. Hazardous materials are also managed to minimize the generation of hazardous waste. Fort Hood has implemented a Hazardous Material Management Program (HMMP) that centrally manages all hazardous materials on the post. The concept of centralized control is to manage the materials “from cradle to grave” and reduce hazardous waste generation. Fort Hood’s Spill Prevention, Control, and Countermeasure (SPCC) Plan and Installation Spill Contingency Plan address the prevention of unintentional pollutant discharges from the bulk storage and handling of petroleum products and other hazardous materials. The plans detail the specific storage locations, the amount of material at potential spill sites throughout Fort Hood, and spill countermeasures. All hazardous materials used on-post must be accompanied by a material safety data sheet (MSDS) that details the hazards associated with each specific substance.

Contractors working on-post must comply with the Fort Hood HMMP and obtain approval for all hazardous materials brought on post. Material containing polychlorinated biphenyls (PCBs), asbestos, and lead may not be introduced on military installations.

Fort Polk

The primary regulatory agency for hazardous waste and hazardous materials at Fort Polk is the LDEQ in Baton Rouge. USEPA Region 6 provides oversight to LDEQ, and both agencies have the authority to inspect and enact direct enforcement against the installation if releases of hazardous materials or wastes occur, or if problems with the installation's handling, storage, transportation, or disposal of hazardous materials or wastes are documented. Hazardous waste and materials handling, storage, and disposal must comply with both the 33 Louisiana Administrative Code Part V and 40 CFR Parts 260-268, 273, and 279.

Hazardous waste is managed through various Fort Polk personnel, primarily through the Environmental and Natural Resources Management Division (ENRMD). The ENRMD publishes a Hazardous Waste Management Plan (HWMP) that provides standard operating procedures for the collection, storage, transport, and disposal of hazardous waste.

The generation of hazardous waste at Fort Polk has decreased significantly over the past several years because of better education of individual generators on the post, improved business practices, and implementation of pollution prevention practices and equipment. However, the installation remains a large-quantity generator under the regulations of the RCRA (ENRMD, 2006).

Fort Polk is not permitted to store hazardous waste; therefore, all hazardous waste is disposed of from the installation within 90 days of its generation. There are two less-than 90-day hazardous waste storage sites at Fort Polk, which are owned and operated by the DPW. Hazardous wastes are removed from the installation through the Defense Reutilization and Marketing Office (DRMO). However, in some cases contractors performing work on the installation will be required to arrange for direct disposal of hazardous waste that is generated by their operations (ENRMD, 2006).

3.7.2.2 Solid Waste

Municipal Solid Waste

Fort Hood

Fort Hood landfill is located in Coryell County. The landfill is a government-owned, contractor-operated Class I municipal solid waste permitted facility, operating under Permit Number 1866. Solid waste collection is accomplished under contract with a private refuse contractor. Fort Hood is actively engaged in technology advancements for solid waste processing to continue to exceed all DoD goals. In FY 2008, the Fort Hood landfill accepted 25,702 tons of municipal solid waste. The remaining capacity of the Fort Hood landfill is estimated at approximately 1.6 million tons and 60 years (TCEQ, 2009).

Fort Polk

Municipal solid waste generated at Fort Polk is disposed of at Independent Environmental Services Incorporated (IESI) Landfill, a privately owned landfill. The landfill is operated under Permit Number P-0339. IESI is permitted for 59 acres and has an additional 172 acres available for future use. As of FY 2009, it was estimated that the landfill has a remaining capacity of approximately 8.2 million tons and 32 years (LDEQ, 2009a).

Construction/Demolition Debris

Fort Hood

There are no permitted C&D landfills in Coryell or Bell Counties. Therefore, it is assumed that C&D debris generated would be disposed of in one of the three C&D permitted landfills located in Erath and Travis Counties. These landfills received a total of 271,312 tons of C&D debris in FY2008. The total remaining capacity of these landfills is 2,071,139 tons and 65 years (TCEQ, 2009).

Fort Polk

Fort Polk disposes of construction debris at Schamerhorn landfill, which is a C&D debris landfill not permitted to receive refuse. The landfill is located in Vernon Parish and operates under Permit Number 82479. The landfill received 21,524 tons of C&D debris in FY 2009 and had a remaining capacity of 12 months. However, there are plans to expand the facility to an additional 6.6 million cubic yards, which would increase the estimated life of the facility an additional 39 years (LDEQ 2009b, and SCDL 2009).

3.8 SOCIOECONOMIC RESOURCES

3.8.1 DEFINITION OF RESOURCE

Socioeconomic resources are defined as the basic attributes associated with the human environment, particularly population and economic activity. Population is described by the change in magnitude, characteristics, and distribution of people. Economic activity is typically composed of employment distribution, personal income, and business growth. Any impact on these two fundamental socioeconomic indicators can have ramifications for secondary considerations, like housing availability and public service provision.

To comply with NEPA, the planning and decision making process for actions proposed by federal agencies involves a study of other relevant environmental statutes and regulations, including EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The essential purpose of EO 12898 is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income

with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, and local programs and policies.

Because children may suffer disproportionately from environmental health risks and safety risks, EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was introduced in 1997 to prioritize the identification and assessment of environmental health risks and safety risks that may affect children and to ensure that federal agency policy, programs, activities, and standards address environmental risks and safety risks to children. This section identifies the distribution of children and locations where the number of children in the affected area may be proportionately high (e.g., schools, child care centers, etc.).

The ROI for socioeconomic for this analysis includes Bell County and Coryell County in Texas where Fort Hood is located and Vernon Parish where Fort Polk, Louisiana is located. Existing conditions for environmental justice were analyzed through demographic characterization, particularly ethnicity and poverty status for the ROI.

3.8.2 EXISTING CONDITIONS

3.8.2.1 Population and Employment

Regional Conditions

In 2009, the total population of the ROI was estimated at 404,932 persons. Bell County has the largest population of the three areas that make up the ROI with 285,787 persons followed by Coryell County with 72,529 people (USCB, 2009a) and Vernon Parish, Louisiana with 46,616 persons (USCB, 2009b). Between 2000 and 2009, Bell County experienced a 2.06 percent annual growth rate while Coryell County saw a 0.37 percent decline in the annual growth rate. The State of Texas experienced a 1.97 percent annual growth rate over the same nine year period (USCB, 2009a). Vernon Parish experienced a 1.32 percent decline in the annual growth rate while the State of Louisiana only experienced a 0.6 percent increase in the annual growth rate between 2000 and 2009 (USCB, 2009b).

Total full-time and part-time employment in the ROI in 2008 was 244,583 jobs (BEA, 2008a; 2008b). Between 2001 and 2008, employment grew at an average annual rate of approximately 3.15 percent in Bell County, 3.46 percent in Coryell County, and 1.51 percent in Vernon Parish. Most of the employment in the ROI is in the government and government enterprises industry, particularly local and state government. Bell County and Vernon Parish also had high employment in the military industry (BEA, 2008a; 2008b).

Fort Hood

Fort Hood is a major economic driver for its adjacent communities. As the largest Army base in the U.S., Fort Hood has an estimated total annual economic impact of \$10.9 billion on the state of Texas (GKCC, 2008). Fort Polk, Louisiana has an annual economic impact of \$1.767 billion (JRTC and Fort Polk, 2010).

Fort Polk

The total post population at Fort Polk, Louisiana is 9,792 persons (JRTC and Fort Polk, 2010). In addition, the installation supports 5,758 civilian employees, 74,449 retired military personnel, and 18,771 military family members (JRTC and Fort Polk, 2010). Fort Hood, Texas has 50,343 active duty personnel, 246,718 retirees and family members, and 8,909 civilian/NAF/other employees (USAF, 2009).

3.8.2.2 Housing

Regional Conditions

Fort Hood

In 2008, there were a total of approximately 158,745 housing units in the three county ROI. Nearly 85 percent of the 113,527 housing units in Bell County were occupied and 15 percent were vacant (USCB, 2008a). In Coryell County, 86 percent of the 23,577 housing units were occupied and 14 percent were vacant (USCB, 2008b). In Vernon Parish, nearly 82 percent of the 22,051 housing units were occupied and 18 percent were vacant (USCB, 2008c). The median value of an owner occupied home ranged from \$81,600 in Vernon Parish (USCB, 2008c) to \$110,800 in Bell County (USCB, 2008a).

Fort Polk

There are a total of 8,382 housing units available at Fort Polk, Louisiana including 4,812 single soldier quarters, 110 senior bachelor quarters, and 3,460 family housing units (JRTC and Fort Polk, 2010). The majority of military personnel and their families (63 percent) reside off post while the remaining (37 percent) military personnel reside on post (JRTC and Fort Polk, 2010). Military members that reside off base are typically located within the surrounding communities of Leesville and DeRidder.

At Fort Hood, Texas there are over 6,000 housing units available throughout the 13 different communities on the installation (USAF, 2010a). Approximately 17,954 military family members reside on post while 89,933 military family members reside off post (USAF, 2009). The closest communities to Fort Hood, Texas include Killeen to the east and Copperas Cove to the west.

3.8.2.3 Environmental Justice and Special Risks to Children

Disadvantaged groups within the ROI, including low-income and minority communities, are specifically considered in order to assess the potential for disproportionate occurrence of impacts. For the purposes of this analysis, disadvantaged groups are defined as follows:

- **Minority Population:** Persons of Hispanic origin of any race, Blacks or African Americans, American Indians, Alaska Natives, Asians, and Native Hawaiian of other Pacific Islanders.
- **Low-Income Population:** Persons living below the poverty level, according to income data collected in the 2000 Census.
- **Youth Population:** Children under the age of 18 years.

Fort Polk is located in Vernon Parish and Fort Hood is located in Bell and Coryell Counties. Therefore, Vernon Parish was compared to the State of Louisiana and Bell and Coryell Counties were compared to the State of Texas. These areas are also compared to the nation in order to determine if a high percentage of minority or low-income persons would be affected.

3.8.2.4 Demographics

The comparative statistics for race and Hispanic identification for the ROI are presented in Table 3.8-1. The three largest groups for all areas were persons identifying themselves as, “White,” “Black or African American,” and “Hispanic or Latino (of any race).” “American Indian and Alaska Native” and “Native Hawaiian and Other Pacific Islander” groups comprised the smallest percentage of the population throughout the county, state, and national levels.

Table 3.8-1. Profile of Demographic Characteristics, Year 2000

Geographic Area	Race								Hispanic or Latino (of any race)
	One Race							Two or more races	
	One race	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race		
Bell County, TX	228,805	150,900	48,624	1,717	6,097	1,141	20,324	9,169	39,701
(%)	96.1	63.4	20.4	0.7	2.6	0.5	8.5	3.9	16.7
Coryell County, TX	72,323	48,946	16,344	659	1,313	365	4,696	2,655	9,424
(%)	96.5	65.3	21.8	0.9	1.8	0.5	6.3	3.5	12.6
Vernon Parish, LA	50,746	38,717	8,962	768	828	160	1,311	1,785	3,111
(%)	96.6	73.7	17.1	1.5	1.6	0.3	2.5	3.4	5.9
State of Texas	20,337,187	14,799,505	240,4566	118,362	562,319	14,434	2,438,001	514,633	6,669,666
(%)	97.5	71.0	11.5	0.6	2.7	0.1	11.7	2.5	32.0
State of Louisiana	4,420,711	2,856,161	145,1944	25,477	54,758	1240	31,131	48,265	107,738
(%)	98.9	63.9	32.5	0.6	1.2	0.0	0.7	1.1	2.4
United States	274,595,678	211,460,626	346,58190	2,475,956	10,242,998	398,835	15,359,073	6,826,228	35,305,818
(%)	97.6	75.1	12.3	0.9	3.6	0.1	5.5	2.4	12.5

Note: Percent of total population (row 2) that each group represents is given in parenthesis. Only the percentages under the ‘Race’ heading will total 100 percent. Hispanic or Latino can be part of any race, and therefore the percent of Hispanic or Latino is percent of total population.

Source: USCB 2000a, 2000b, 2000c; 2000d; 2000e; 2000f

3.8.2.5 Poverty and Legal Status

The poverty and legal status for the geographic comparison areas are presented in Table 3.8-2. Poverty in 2000 was defined as an income of \$8,794 in a household of one individual, or \$17,603 for a family of four (USCB, 2000). Bell County and Coryell County have lower poverty rates than the State of Texas average but Bell County has a 0.7 higher percent of persons under age 18 than the State of Texas. Vernon Parish also has a lower percent of individuals below poverty level than the State of Louisiana but a higher percent of persons under the age of 18 than the State of Louisiana (Table 3.8-2).

Table 3.8-2. Populations of Concern in the ROI, Year 2000

<i>Geographic area</i>	<i>Percent Individuals Below Poverty Level</i>	<i>Percent Persons Under Age 18</i>
Bell County, Texas	12.1	28.9
Coryell County, Texas	9.5	26.2
Vernon Parish, Louisiana	15.3	29.1
State of Texas	15.4	28.2
State of Louisiana	19.6	27.3
United States	12.4	25.7

Source: USCB 2000a, 2000b, 2000c; 2000d; 2000e; 2000f

3.9 UTILITIES

The utilities described and analyzed for potential impact resulting from the training of the LRE of the Predator RPA weapons system include potable water, electricity, natural gas, wastewater, and stormwater drainage infrastructure and communications.

The description of each utility focuses on existing infrastructure (e.g., wells, water systems, wastewater treatment plants), current utility use, and any predefined capacity or limitations as set forth in permits or regulations.

3.9.1 DEFINITION OF RESOURCE

Water that is drinkable by humans is referred to as potable water. Potable water is safe to consume because it either comes from an uncontaminated aquifer (an underground layer of porous rock containing water) or it has been pretreated to eliminate contaminants that would potentially cause illness in humans. Electrical supply refers to the demand on the facilities' electrical substations and distribution system. Natural gas refers to the on-base transmission and distribution system, capacity for use and the ways in which natural gas is used. Wastewater is water that has been used and contains dissolved or suspended waste materials including human wastes, food waste, soaps, detergents, and other cleaning materials. Before the wastewater can be released into the environment, it is treated at wastewater treatment plants to remove pollutants. Stormwater drainage infrastructure includes ditches and pipes, oil water separators and water

storage, all of which serve to collect, transport and control water runoff from impervious surfaces. Communications refers to the existing cable, internet, radio, telephone and satellite equipment and infrastructure that facilitate the transfer of information between buildings, personnel, aircraft and systems.

3.9.2 EXISTING CONDITIONS

3.9.2.1 Water Supply

Fort Hood

Three separate potable water distribution systems serve the residential, industrial and fire response needs of Fort Hood. The Main Cantonment Area and West Fort Hood are served by one system, and North Fort Hood and the Belton Lake Outdoor Recreation Area (BLORA) are each served by different systems. Fort Hood water distribution systems are managed for the Army by American Water O&M, Inc. Potable water is purchased from the Bell County Water Control and Improvement District who obtains the water from Belton Lake and the City of Gatesville. The potable water distribution system consists of 18 surface storage tanks, treatment systems, 300 miles of piping and groundwater supply, pump stations, distribution mains, valves, fire hydrants and meters (American Water, 2009; U.S. Army, 2009). Total production is 0.300 million gallons per day (American Water, 2009). The total storage capacity is 0.074 million gallons and the average daily consumption is 0.079 million gallons per day. In 2008 water quality was good, with no contaminants or microbial pathogens detected at levels that exceeded federal standards (U.S. Army, 2009).

Fort Polk

A private entity, American Water, maintains and operates the Fort Polk potable water distribution system, which consists of 12 active supply wells, 12 elevated and ground storage tanks, and an associated network of piping (American Water, 2009).

3.9.2.2 Electrical Supply

Fort Hood

Electricity to Fort Hood is provided by Oncor Electric Delivery Company, LLC, which owns two of the four substation transformers on Fort Hood. The base owns the other two in the system which have 189 megawatts of capacity and two 138,000-volt transmission lines. Substation transformers step down voltage supplied by Oncor Electric to the appropriate voltage level so that it can be distributed to the end users. The electrical distribution system includes over 600 miles of electrical lines (U.S. Army, 2009).

Fort Polk

Two electrical distribution systems provide the Fort Polk north and south cantonment areas with electrical power. These two systems are supplied by their own substations, and receive a total of 34.5 kilovolts (KV) from the Louisiana Power and Light Company (U.S. Army, 2004). The south substation consists of three transformers with a combined capacity of 67.2 megavolt-amperes. The north substation consists of two separate 4 megavolt-ampere substations. Circuit breakers for the north and south substations are oil-filled (U.S. Army, 2004).

In 2000, the annual per person electricity use at Fort Polk was 18.3 kilowatt hours per day or 189,245 megawatt hours annually. Demand on electrical usage has decreased since 1990 due to decreases in personnel (U.S. Army, 2004).

3.9.2.3 Natural Gas

Fort Hood

Natural gas for Fort Hood is supplied by Atmos Energy. The natural gas distribution system receives gas under high pressures where it is reduced by three metering regulator stations to a usable pressure of 50 pounds per square inch (psi). Atmos Energy owns the regulator stations and Fort Hood owns the distribution pipeline. The capacity of the system is 491,492 cubic feet per hour (CFH). Over 200 miles of gas pipeline serve Fort Hood primarily for water heating and installation heating. The annual volume of gas delivery is approximately 1,300,000 cubic feet (U.S. Army, 2009).

Fort Polk

Fort Polk has used natural gas since 1942 to provide heat, hot water for domestic uses (cooking, laundry) and even for some cooling requirements. The north and south cantonment areas are serviced by two gas marketing companies, each using separate natural gas transmission lines (U.S. Army, 2004). The Public Gas Company serves both the north and south cantonment areas, and the hospital area in the south cantonment area is also served by the Entex Gas Company. The gas companies manage gas pressures of the supply lines, maintaining pressures between 18 to 200 psi. Distribution lines consist of steel, polyvinyl chloride (PVC) pipe and polyethylene pipe and range in diameter from $\frac{3}{4}$ inch to 8 inches. Current supplies of natural gas are considered adequate (U.S. Army, 2004).

Annual natural gas use per person was 25.7 cubic feet per day in 2000 and 266,178 kilocubic feet annually (U.S. Army, 2004).

3.9.2.4 Wastewater

Fort Hood

Four separate systems collect and treat administrative, industrial and residential wastewater for facilities on the Main Cantonment and West Fort Hood areas, North Fort Hood, Liberty Village and the BLORA. Local utilities provide offsite treatment for the Main Cantonment/West Fort Hood areas and North Fort Hood. The BLORA system consists of a small collection system and an activated sludge package treatment plant. Similarly, the Liberty Village system consists of a small independent collection system (U.S. Army, 2009a).

Fort Polk

American Water maintains and operates the Fort Polk wastewater collection system, which consists of two wastewater treatment plants, constructed in 1941 and later upgraded, and 140 miles of pipe (U.S. Army, 2005). The two plants, the North Fort Polk Wastewater Treatment Plant and South Fort Polk Wastewater Treatment Plant, have a capacity of 1.4 and 3.8 million gallons per day respectively (American Water, 2009). Other smaller wastewater treatment systems, Peason Ridge and Toledo Bend serve Fort Polk, processing less than 25,000 gallons per day (U.S. Army, 2004). The South Fort Polk plant discharges into a series of finishing ponds and the North Fort plant discharges into Whiskey Chitto Creek (U.S. Army, 2005).

3.9.2.5 Stormwater Drainage Infrastructure

Fort Hood

Stormwater drainage infrastructure on Fort Hood consists of a network of open and closed conveyances and holding areas consisting of ditches, pipes, drains and ponds for the purpose of collecting, transporting and storing stormwater borne runoff. For the Proposed Action, the primary receiving area for stormwater from Beacon Hill, the concrete pad and potential future hangar location, is Gray Lake at the south end of the runway. At the north end of the runway adjacent to the proposed hangar structure site, is a 5,000 square foot retention pond and drainage ditch. To control sediment entering Belton Lake, Fort Hood constructed over 30 sediment retention ‘lakes’ erosion structures (U.S. Army, 2006).

Fort Polk

Stormwater drainage infrastructure consists of a network of open and closed conveyances and holding areas consisting of ditches, pipes, drains and ponds for the purpose of collecting, transporting and storing stormwater borne runoff from impervious surfaces.

3.9.2.6 Communications

Fort Hood

Communications infrastructure servicing the airfield may include cable, internet, and radio communications lines and components. There is a radio tower located on the Beacon Hill site proposed for the LRE concrete pad. The open structure at the north end of the runway proposed for enclosure as a hangar may lack telephone and internet utilities infrastructure.

Fort Polk

Communications infrastructure servicing the airfield and potential hangar structures include cable, internet, and radio communications lines and components.

3.10 SOILS

3.10.1 DEFINITION OF RESOURCE

The term “soils” refers to unconsolidated materials formed from the underlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil drainage, texture, strength, and erodability all determine the suitability of the ground to support man-made structures, facilities, and military activities. Depending on their properties and the topography in which they occur, soils have varying susceptibility to erosion. Soil disturbance associated with development may potentially result in erosion and the transport of eroded soils. Portions of the affected environment that have been built up may be characterized by impervious surfaces (i.e., areas that water cannot seep into, such as roads and paved parking areas). During rainfall events, water moves across impervious surfaces into stormwater drains and retention basins, and is ultimately transported into local water bodies.

In December 2007, Congress enacted the Energy Independence and Security Act (EISA); Section 438 of this Act establishes stormwater runoff requirements for Federal development and redevelopment projects. In January 2010, the Deputy Under Secretary of Defense, Installation and Environment issued a memorandum directing DoD components to implement EISA Section 438 using Low Impact Development (LID) techniques. As a result, the policy has been incorporated into the *Unified Facilities Criteria (UFC) Low Impact Development 3-210-10*. *UFC 3-210-10* provides the technical criteria, technical requirements, and references for the planning and design of applicable projects to comply with stormwater requirements under EISA Section 438. LID is a stormwater management strategy designed to maintain site hydrology and mitigate the adverse impacts of stormwater runoff and nonpoint source pollution (DoD, 2010). While the criteria and design standards in *UFC 3-210-10* apply to all DoD construction, EISA Section 438 requirements apply to projects where the construction footprint is greater than 5,000

square feet. The overall design objective is to maintain predevelopment hydrology and prevent any net increase in stormwater runoff. Project site design options shall prioritize integrated management practices that are proven within the regional area and have the greatest cost benefit/lowest lifecycle costs. Stormwater retention/reuse would typically include bio-retention areas, permeable pavements, cisterns/recycling, and green roofs.

Under the CWA, it is illegal to discharge pollutants from a point source into any surface water without a National Pollutant Discharge Elimination System (NPDES) permit. Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the U.S. must obtain certification from the state in which the discharge would originate, or if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval [such as issuance of a Section 404 permit]) must also comply with CWA Section 401. The state of Texas and the state of Louisiana have legal authority to implement and enforce the provisions of the CWA, while the USEPA retains oversight responsibilities. Sediments affect water clarity, decrease oxygen levels in water, and transport pollutants. As soil quality declines (erosion), adverse impacts to on-site and off-site environments increase. Therefore, the maintenance of soil quality is important for efficient and productive land management and utilization.

Because the proposed construction at the Fort Polk site is limited to small areas with minimal impervious surface disturbance, the discussion of soils and potential surface water runoff is limited to the Fort Hood site. Use of appropriate BMPs (such as silt fences, straw bale dikes, diversion ditches, riprap channels, or water spreaders) would be implemented to reduce soil erosion and sedimentation.

3.10.2 EXISTING CONDITIONS

3.10.2.1 Fort Hood

Soils

The soil identified within the proposed project area is Denton silty clay with 1 to 3 percent slopes. Denton silty clay is well-drained with moderate water capacity and no flooding/ponding (NRCS, 2011). The soil has a low potential for water erosion; however, the soil has a high potential for wind erosion (NRCS, 2011a; 2011b). In addition, Denton silty clay has a rating of “very limited” for small commercial metal building construction on concrete slabs where small commercial metal buildings are spaces of two stories or less and concrete slabs consist of spread footings of reinforced concrete at a depth of 2 feet or depth of frost penetration, and a “somewhat

1 limited” rating for concrete driveway/sidewalk construction; the rating is based on soil properties
2 that affect the capacity of the soil to support a load without movement, and on the properties that
3 affect excavation and construction costs (NRCS, 2011c; NRCS, 2011d). A “very limited” rating
4 indicates that the soil has one or more features that are unfavorable for the specified use and
5 would require special design and/or major soil reclamation. The hill area to the south of the
6 project area contains soil identified as Real-Rock outcrop complex with a slope of 12 to 40
7 percent. The Real-Rock outcrop complex is well-drained with very low water capacity and no
8 flooding/ponding (NRCS, 2011e). The soil has a very high potential for water erosion and a very
9 low wind erosion potential (NRCS, 2011a; 2011b).

10 ***Potential Receiving Waters***

11 Fort Hood is located in the Brazos River Basin and it has approximately 55 miles of rivers and
12 streams. Fort Hood also contains more than 200 water impoundments (approximately 692
13 surface-acres). The majority of the impoundments are used for flood control, sediment retention,
14 wildlife and livestock water, and fish habitat. A few of the impoundments serve as either wash
15 rack storage facilities or sewage treatment ponds (Fort Hood, 2007).

16 Approximately 50 percent of Fort Hood is in the Cowhouse Creek watershed. Reese Creek and
17 its tributaries flow south toward the Lampasas River. Also, tributaries of Nolan Creek, including
18 North Nolan Creek and tributaries of South Nolan Creek, flow southeast and leave the
19 installation. Nolan Creek enters the Leon River below Belton Lake (Fort Hood, 2007).

20 Surface water runoff from the northern end of the airfield flows from drainage channels into a
21 tributary of Clear Creek, which eventually flows into Cowhouse Creek. Surface water runoff
22 from the southern portion of the airfield flows towards Reese Creek, which is a tributary of the
23 Lampasas River. The drainage channel nearest to Beacon Hill flows first into Gray Lake.

24 The TCEQ divides the Middle Brazos River basin into 16 classified segments. Fort Hood is
25 located within four segments of concern. Segment 1220A, Cowhouse Creek, is classified in
26 category 5c, which means that additional data and information need to be collected before a total
27 maximum daily load (TMDL) is scheduled. The upstream portion of the water body is 303(d)-
28 listed as impaired for bacteria. The portions of the Lampasas River from the confluence with
29 Simms Creek upstream to its confluence with Bennett Creek in Lampasas County (Segment
30 1217_04) is 303(d)-listed for bacteria, but is also classified in category 5c. Figure 3.10-1 depicts
31 water resources and floodplains near the project area at Fort Polk. Water resources near the Fort
32 Hood project area were previously depicted in Figure 2.2-1.

**Proposed Operation (Launch and Recovery Element) of MQ-1 Predator and MQ-9 Reaper Aircraft
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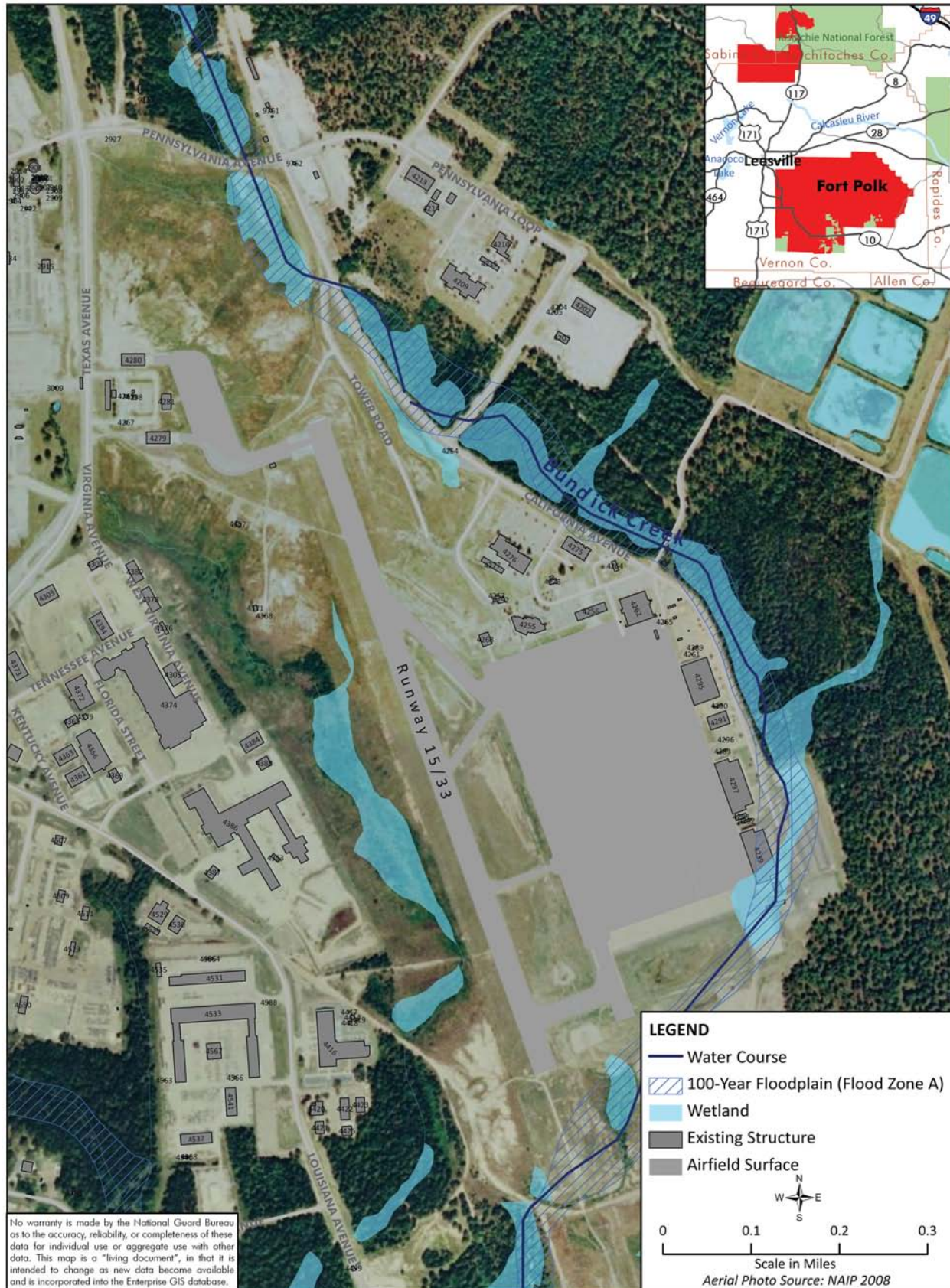


Figure 3.10-1. Water Resources and Floodplains near the Project Area at Fort Polk, LA

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA assesses potential environmental consequences associated with the Proposed Action and the No Action Alternatives. Potential impacts are addressed in the context of the scope of the Proposed Action as described in Section 2.0 and in consideration of the potentially affected environment, as characterized in Section 3.0.

4.1 AIR QUALITY

The CAA Section 176(c), General Conformity, requires federal agencies to demonstrate that their proposed activities would conform to the applicable SIP for attainment of the NAAQS. General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area exceed annual *de minimis* thresholds identified in the rule, a formal conformity determination is required of that action. The thresholds are more restrictive as the severity of the nonattainment status of the region increases. Since the project region is designated as attainment a conformity analysis is not required. Vehicle emissions from personnel driving to either Fort Hood or Fort Polk from Ellington Field JRB are assessed against conformity standards *de minimis* thresholds. All other actions, such as construction and RPA operations, are compared to the respective counties or parish, which are in attainment.

In order to evaluate the air emissions and their impact to the overall ROI, the emissions associated with the project activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 NEI data (U.S. Air Force, No Date). Potential adverse impacts to air quality are identified as the total emissions of any pollutant that equals 10 percent or more of the ROI's emissions for that specific pollutant. The 10-percent criteria approach is used in the USEPA's General Conformity Rule as an indicator for impact analysis for nonattainment and maintenance areas. The USEPA made revisions to the General Conformity Regulations on March 24, 2010. These final revisions remove the requirements for federal agencies to conduct conformity determination for "regionally significant" actions. Such actions have emissions greater than 10 percent of the emissions inventory for a nonattainment area. However, this criterion will still be used in this analysis for the purposes of discussion and comparison. In this case, Bell and Coryell Counties and Vernon Parish are attainment, the General Conformity Rule's impact analysis was utilized to provide a consistent approach to evaluating the impact of construction. Rather than comparing emissions from construction activities to regional inventories (as required in the General Conformity Rule), emissions were compared to the individual counties or parish (Bell, Coryell, and Vernon) potentially impacted, which is a smaller area than required.

Since the only actions that would occur in the Ellington Field JRB area would be the transportation of personnel to and from the proposed RPA sites, only vehicle emissions would be

1 compared to General Conformity *de minimis* thresholds. To assess the significance proposed
2 vehicle emissions would be potentially significant if they exceed the General Conformity *de*
3 *minimis* thresholds as stipulated by 40 CFR 93 of 25 tpy of NO_x and VOC, O₃ precursors.

4 The Air Conformity Applicability Model (ACAM) version 4.3.0 was utilized to provide a level
5 of consistency with respect to emissions factors and calculations. The ACAM provides estimated
6 air emissions from proposed federal actions in areas designated as non-attainment and/or
7 maintenance for each specific criteria and precursor pollutant as defined in the NAAQS. ACAM
8 was utilized to provide emissions for construction, demolition, grading, and paving activities by
9 providing user inputs for each. Vehicle and RPA emissions were calculated in Microsoft Excel
10 using emission factors from the *USAF IERA Air Emissions Inventory Guidance Document for*
11 *Mobile Sources at Air Force Installations*.

12 The air quality analysis focused on emissions associated with the construction activities and
13 operational activities of the RPA and continued transportation of personnel to and from Ellington
14 Field JRB. (Note: Lead was not included in the analysis as the emission factors are not available
15 for the aircrafts and airborne lead is not included in the model (construction emissions). Based on
16 the scope of proposed activities, resulting lead air emissions would be expected to be
17 insignificant. Additionally, Fort Hood and Fort Polk are in attainment for lead.)

18 4.1.1 PROPOSED ACTION

19 The Proposed Action consists of the construction of the concrete pads at each site and a hangar
20 with 15 acres of land that would be graded and paved at Fort Hood. The analysis does not calculate
21 the emissions from renovation activities as they occur inside the building and do not affect regional
22 air quality. Construction projects included in the analysis are shown in Table 4.1-1.

23 **Table 4.1-1. Projects Analyzed for Air Quality Impacts**

<i>Description</i>	<i>Square Footage</i>
Fort Hood, Texas	
Concrete Pad for GDT Antennas (2)	800
Concrete Pad PPLS Antenna (1)	400
Hangar adjacent to runway (Beacon Hill)	30,000
Fort Polk, Louisiana	
Concrete Pad for GDT Antennas (2)	800
Concrete Pad PPLS Antenna (1)	400
Use one of the existing hangars* Bldg 4262	27,416
	36,975

Notes: PPLS – Primary Predator Satellite Link

GDT– Ground terminal data

*These hangars were not included in the construction emissions calculations. These were only used to determine the approximate size of the hangar to be built at Fort Hood, Texas. Square footages were obtained using Google Earth.

Emissions from construction activities are shown in Table 4.1-2. It was assumed that 100 percent of the proposed constructed area would require grading.

Table 4.1-2. Construction Emissions at Fort Polk and Fort Hood

Source Category	Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Fort Hood Construction Emissions					
Grading Equipment	0.75	2.83	0.23	0.29	0.30
Grading Operations	0.00	0.00	83.02	0.00	0.00
Acres Paved	0.00	0.00	0.00	0.00	0.02
Mobile Equipment	2.21	5.28	0.43	0.65	0.48
Non-Residential Architectural Coatings	0.00	0.00	0.00	0.00	0.17
Stationary Equipment	15.02	0.39	0.01	0.02	0.56
Workers Trips	0.24	0.01	0.00	0.00	0.01
Total	18.22	8.51	83.69	0.96	1.55
Fort Polk Construction Emissions					
Grading Equipment	0.00	0.01	0.00	0.00	0.00
Grading Operations	0.00	0.00	0.17	0.00	0.00
Mobile Equipment	0.09	0.20	0.02	0.03	0.02
Non-Residential Architectural Coatings	0.00	0.00	0.00	0.00	0.03
Stationary Equipment	0.58	0.01	0.00	0.00	0.02
Workers Trips	0.01	0.00	0.00	0.00	0.00
Total	0.67	0.22	0.18	0.03	0.07

Notes: CO – Carbon Monoxide; NO_x – Nitrogen Oxides; PM₁₀ – Particulate Matter; SO_x – Sulfur Oxides; and VOC – Volatile Organic Compounds

Operational emissions from the MQ-1 and MQ-9 were calculated assuming a total of five sorties per week, two weeks per month giving a total of 120 sorties per year. For these operations 30 personnel would travel from Ellington Field JRB to either Fort Hood or Fort Polk using a mix of government owned vehicles and privately owned vehicles. Assuming five people per vehicle, two trips per week, and two weeks per month travel would be required emissions were calculated for 288 trips per year. Emergency generator emissions were calculated for both locations using the maximum annual hours of use (100 hours) for a 300 horsepower diesel generator. (Note: If the backup generator is a permanent compression ignition type, rated between 100-500 brake horsepower, then 40 Code of Federal Regulation 63 Subpart ZZZZ would apply. If the generator would require a non-resettable hour meter on the engine to record hours of operation.)

Emissions calculated all construction at each of the respective sites, as well as operational activities of the RPA. It was assumed that the projects would be completed in one year and all construction, demolition and paving was included. Emissions are reported as construction, point source, and mobile source. The majority of the emissions are from construction emissions (Table 4.1-3).

As shown in Table 4.1-3, the emissions would not exceed the 10 percent criterion. Both construction and operational emissions would make up less than 1 percent of the respective counties/parish.

Table 4.1-3. Emissions from the Proposed Action

<i>Emission Activities</i>	<i>Emissions (tons/year)</i>				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Fort Hood Emissions					
Construction Emissions	18.22	8.51	83.69	0.96	1.55
Point Source	0.09	0.11	0.01	0.00	0.01
MQ-9 Emissions	0.16	0.04	0.01	0.00	0.05
Vehicle Emissions	2.69	0.21	0.06	0.01	0.24
Emergency Generator	0.02	0.07	0.01	0.03	0.00
Total	21.17	8.87	83.77	0.97	1.84
Bell County Emissions	75,239	14,995	62,049	1,748	10,961
<i>Percentage of Bell County Emissions</i>	<i>0.03%</i>	<i>0.06%</i>	<i>0.14%</i>	<i>0.06%</i>	<i>0.02%</i>
Coryell County Emissions	10,171	1,449	13,857	149	1,606
<i>Percentage of Coryell County Emissions</i>	<i>0.21%</i>	<i>0.61%</i>	<i>0.60%</i>	<i>0.65%</i>	<i>0.11%</i>
Fort Polk Emissions					
Construction Emissions	0.67	0.22	0.18	0.03	0.07
Point Source Emissions	0.00	0.00	0.00	0.00	0.00
MQ-1 Emissions	0.78	0.02	0.00	0.00	0.04
Vehicle Emissions	2.60	0.20	0.06	0.01	0.22
Emergency Generator Emissions	0.02	0.07	0.01	0.03	0.00
Total	4.08	0.52	0.25	0.06	0.33
Vernon Parish Emissions	12,441	1,783	5,862	107	1,933
<i>Percentage of Vernon Parish Emissions</i>	<i>0.03%</i>	<i>0.03%</i>	<i>0.00%</i>	<i>0.06%</i>	<i>0.02%</i>

Notes: CO – Carbon Monoxide; NO_x – Nitrogen Oxides; PM₁₀ – Particulate Matter; SO_x – Sulfur Oxides; and VOC – Volatile Organic Compounds

Emissions would also be minimal compared to the County annual emissions. Vehicle emissions would be less than 1 ton per year NO_x and VOC (O₃ precursors) therefore would not be in violation of the 25 tons per year *de minimis* thresholds for Harris County's (Ellington Field JRB) severe nonattainment for 8-hour O₃. Construction emissions would cause short-term, temporary, and local changes to the air quality. RPA operations and transport vehicle emissions would be ongoing occurrences thus would cause a slight overall increase in pollutant emissions to the region. No adverse impacts are expected to regional air quality.

4.1.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

This alternative would have the same emissions as discussed in the Proposed Action for Fort Polk. Fort Hood would operate both MQ-1 and MQ-9 aircraft for this alternative. It was assumed the total number of annual operations would be the same. The number of sorties were divided equally between the aircraft types (125 operations per aircraft type for a total annual operation of 250). Emissions for Alternative 1 actions are shown in Table 4.1-4. The air emissions would not exceed 10 percent of the ROI emissions thus no adverse impacts would occur due to Alternative 1 actions.

Table 4.1-4. Emissions from Alternative 1

<i>Emission Activities</i>	<i>Emissions (tons/year)</i>				
	CO	NO_x	PM₁₀	SO₂	VOC
Construction Emissions	18.22	8.51	83.69	0.96	1.55
Point Source	0.09	0.11	0.01	0.00	0.01
MQ-1 & MQ-9 Emissions	0.47	0.03	0.01	0.00	0.05
Vehicle Emissions	2.69	0.21	0.06	0.01	0.24
Emergency Generator	0.02	0.07	0.01	0.03	0.00
Total	21.47	8.86	83.77	0.97	1.83
Bell County Emissions	75,239	14,995	62,049	1,748	10,961
<i>Percentage of Bell County Emissions</i>	<i>0.03%</i>	<i>0.06%</i>	<i>0.14%</i>	<i>0.06%</i>	<i>0.02%</i>
Coryell County Emissions	10,171	1,449	13,857	149	1,606
<i>Percentage of Coryell County Emissions</i>	<i>0.21%</i>	<i>0.61%</i>	<i>0.60%</i>	<i>0.65%</i>	<i>0.11%</i>

Notes: CO – Carbon Monoxide; NO_x – Nitrogen Oxides; PM₁₀ – Particulate Matter; SO_x – Sulfur Oxides; and VOC – Volatile Organic Compounds

4.1.3 NO ACTION ALTERNATIVE

Under the No Action Alternative the Predator LRE training would not be conducted at Fort Hood or Fort Polk therefore no changes to baseline air quality would occur. No adverse impacts to air quality for the No Action Alternative.

4.2 BIOLOGICAL RESOURCES

Significance Criteria

Determination of the significance of impacts to biological resources is based upon: 1) importance (legal, commercial, recreational, ecological, or scientific) of the resource, 2) the rarity of a species or habitat regionally; 3) the sensitivity of the resource to proposed activities; 4) the proportion of the resource that would be affected relative to its occurrence in the region, and 5) the duration of the impact. Impacts to biological resources are considered to be greater if priority species or habitats are adversely affected over relatively large areas and/or disturbances cause reductions in population size or distribution of a priority species.

The *Migratory Bird Treaty Act of 1918* (16 USC 703-712) provides protection for migratory birds or any part, nest, or egg of such bird through conventions with other countries and prohibiting take, purchase, and transport of these birds.

4.2.1 PROPOSED ACTION (PREFERRED ALTERNATIVE)

Neither the Fort Hood nor Fort Polk locations are expected to have a long-term significant impact on biological resources; however, short-term, minor adverse impacts to threatened and endangered species are likely to occur as a result of the construction project at Fort Hood. While habitat for the Golden-cheeked Warbler is adjacent to the site for the Proposed Action, no take of habitat would occur and major earth-disturbing activities would occur outside of the nesting

1 season (March through August). The proposed conduits would run along the top of the ground
2 or within a trench extending up the side of Beacon Hill.

3 The conduits would be placed primarily along, or within, a previously disturbed area consisting
4 of a washout that runs along the side of the hill. (Note: During the site visit, it was observed that
5 portions of an existing conduit are located along this area. The existing conduit appears to run
6 from the airfield to the radio tower on top of the hill.) If trenching operations at Fort Hood are
7 necessary for the conduit installation, trenching would occur outside of the nesting season.

8 In addition, the Proposed Action at Fort Hood would require line-of-sight at both ends of the
9 runway, necessitating trimming the tops of trees. Trimming would be limited to only small
10 branches and would not include sections of the tree trunks. Trimming for line-of-sight would not
11 count as a take under the new Biological Opinion; however, this activity must be done outside of
12 the nesting season (Pekins, 2010). Construction activities would generate minor species
13 annoyances such as dust and noise; however, these activities would be short-term and limited to
14 the construction phase. Normal facility operation would remain consistent with the existing
15 surrounding land use. The Proposed Action would have no direct effect on federally listed
16 protected species, or other rare and candidate species.

17 As discussed with respect to threatened and endangered species, short, minor adverse impacts to
18 wildlife would likely occur as a result of the construction of the Proposed Action. Small
19 mammals, ground-nesting birds and herpefauna may be displaced and travel corridors disrupted.
20 These disturbances would be minor when compared to the overall available habitat and
21 adaptability of their populations on the installation.

22 The Proposed Action at the Beacon Hill location at Fort Hood would involve disturbance of
23 grassy areas where migratory birds may forage or nest. If migratory birds are found in the
24 proposed project location, appropriate measures would be taken to ensure that compliance with
25 the Migratory Bird Treaty Act is met, such as limiting construction activities to periods of time
26 when migratory birds are not nesting, halting excavation when or if birds are found, and creating
27 buffer zones around the nests.

28 The project areas for both locations are predominantly asphalt or pavement, with the exception
29 of the Beacon Hill location at Fort Hood. Some vegetation would have to be removed at this
30 location and the TXANG would comply with the Fort Hood Installation Design Guide for tree
31 removal, replanting if required. There are no wetlands within the Fort Polk or Fort Hood project
32 areas. Recreational areas would not be affected.

4.2.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

Infrastructure elements under the Alternative Action are the same as under the Preferred Alternative and therefore, potential impacts to biological resources are the same as discussed in Section 4.2.1.

4.2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative the proposed beddown would not occur. There would be no change with regard to wildlife, vegetation or threatened and endangered species.

4.3 CULTURAL RESOURCES

Significance Criteria

Cultural resources are subject to review under both federal and state laws and regulations. Under the NHPA of 1966 (as amended), federal agencies must determine the significance of cultural resources under their jurisdiction by evaluating them relative to NRHP eligibility criteria. Cultural resources that have been determined to be significant are eligible for listing on the NRHP, and are called historic properties. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings (i.e., any federally initiated, licensed, or permitted projects) on historic properties. An effect may be considered adverse if it changes those qualities of a historic property that qualify it for the NRHP, or if a cultural resource has been identified as important to Native Americans, as outlined in the American Indian Religious Freedom Act (AIRFA,) EO 13007, *Indian Sacred Sites*, and other regulations. The NHPA also requires the agency to consult with the SHPO regarding the undertaking and any effects to historic properties.

DoD *American Indian and Alaska Native Policy* (1999) and DoDI 4710.02, *DoD Interactions with Federally-Recognized Tribes* (2006), provide guidance for interacting and working with federally recognized American Indian governments. DoD policy requires that installations provide timely notice to, and consult with, tribal governments prior to taking any actions that may have the potential to affect protected tribal resources, tribal rights, or American Indian lands.

Analysis of potential significant impacts to cultural resources considers direct impacts that may occur by:

- physically altering, damaging, or destroying all or part of a resource.
- altering characteristics of the surrounding environment that contribute to the resource's significance.

- introducing visual or audible elements that are out of character with the property or alter its setting.
- neglecting the resource to the extent that it deteriorates or is destroyed.

Direct impacts can be assessed by identifying the types and locations of proposed activities and determining the exact location of cultural resources that could be affected. Indirect impacts occur later in time or farther from the Proposed Action. Indirect impacts to cultural resources generally result from the effects of project-induced population increases, such as the need to develop new housing areas, utility services, and other support functions to accommodate population growth. These activities and the subsequent use of the facilities can impact cultural resources.

4.3.1 PROPOSED ACTION

4.3.1.1 Fort Hood

A single historic site is located towards the southwest corner of the proposed hangar area, identified as site 41BL0388. This site comprises historic era remains of a farm/ranch from the early 20th century. The site was originally recorded in 1981 as the T.H. Byler Homestead and consists of a sparse artifact scatter, stone well and partial stone fence. The site has been evaluated for listing on the NRHP and has been recommended “not eligible.” This determination has been coordinated with the SHPP and their concurrence received (U.S. Army, 2010c).

Construction of the concrete pads would occur on a site presently occupied by a radio tower and accessible through existing roads. Thus, land clearing would be minimal. Additionally, the GDT/PPSL conduits would be placed within a previously disturbed area. Therefore, the Proposed Action would not directly or indirectly impact cultural resources at Fort Hood.

There is always the possibility, however remote, that previously unknown or unrecorded archaeological resources can be present beneath the ground surface, sometimes underneath existing development. In the unlikely event that previously unrecorded or unevaluated cultural resources are encountered during construction, compliance with Fort Hood’s HPC, would be necessary prior to initiating or continuing that component of the Proposed Action.

4.3.1.2 Fort Polk

The candidate building for the hangar, Building 4265, has been deemed not eligible for the NRHP. Additionally, the proposed location of the three concrete pads is not associated with any known cultural resource or paleontological sites. Therefore, the Proposed Action would not directly or indirectly impact cultural resources at Fort Polk. For any discoveries of previously

unknown archaeological resources encountered during construction of the concrete pads or during minor trenching activities associated with the antenna conduits, the 147 RW would comply with Section 106 of the NHPA prior to initiating or continuing that component of the Proposed Action.

4.3.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

There are no environmental consequences associated with the cultural resource area for Alternative 1 not previously discussed under the Proposed Action. As such, no adverse impacts would occur.

4.3.3 NO ACTION ALTERNATIVE

There would be no significant impact to cultural resources under the No Action Alternative. The TXANG would not conduct MQ-1 Predator LRE training at Fort Hood or Fort Polk, and there would be no disturbance to land or existing structures to accommodate the Predator mission.

4.4 AIRSPACE

Significance Criteria

This chapter overlays the project alternatives from Chapter 2.0 upon the potentially affected environment from Chapter 3.0 to identify potential environmental consequences associated with the beddown and flight operations of Predator aircraft at RGAA and Fort Polk AAF. Potential impacts to airspace management are presented in terms of changes to current airspace utilization and assessment of scheduling difficulties or other conflicts that could potentially be associated with the changes. Airspace management impacts would be considered significant if they would lead to situations in which DoD and/or FAA regulations regarding airspace safety could not be complied with or if proposed activities in the airspace would prevent or substantially interfere with ongoing activities.

4.4.1 PROPOSED ACTION

4.4.1.1 Fort Hood (RGAA and R-6302)

Under the Proposed Action, MQ-9 aircraft would fly approximately 1.5 sorties and 3 visual closed patterns per average busy flying day at RGAA. Sorties would typically consist of the MQ-9 aircraft launching, climbing to operational altitude, training at altitude, and returning to base. At no point would the MQ-9 aircraft depart controlled (Class D or Class E) or restricted airspace. MQ-9 sorties originating from RGAA would accomplish flight training in R-6302A/B/C/D/E. MQ-9 flight training would be conducted at altitudes between 5,000 feet MSL and 40,000 feet

MSL. Sorties flown on Monday and Friday would last an average of 4 hours while sorties on Tuesdays, Wednesdays, and Thursdays would last approximately 6-8 hours. The proposed MQ-9 training may include integrated training with other military units, and use of the airspace by a MQ-9 aircraft would not preclude simultaneous use by other aircraft.

RPA operations present unique airspace management challenges, primarily because RPA aircraft do not have the capability to reliably sense-and-avoid other aircraft. FAA JO 7610.4M, *Special Operations*, Chapter 12 Section 9 and FAA JO 7210.766, *Unmanned Aircraft Operations in the National Airspace System* describe how RPA are to be operated in the U.S. As per the FAA JOs, RPA should normally be flown within restricted area airspace or warning areas. In cases where RPA aircraft must be flown outside of these special use areas, the proponent of the flight must apply to the appropriate Air Traffic Organization of the appropriate FAA Service Office for a COA (FAA JO 7610.4M). The TXANG COA application would include detailed information on the proposed RPA activity as well as the RPA itself. COAs stipulate minimum RPA aircrew qualifications, establish procedures to ensure de-confliction with other aircraft, and describe procedures to be followed if communications between the RPA and its pilot were lost. No MQ-9 flights would occur until the COA is approved.

It is expected that the MQ-9 COA would be similar to the existing COA for MQ-5 “Hunter” RPA aircraft operations at RGAA and that many, if not all, of the same operational provisions would be incorporated. If the MQ-9 COA were to include the same provisions as the MQ-5 COA, The RGAA aerodrome would be able to continue to accommodate non-RPA air traffic, with some constraints, while MQ-9 flying operations are under way. One constraint would be that civilian air traffic would not be allowed to conduct visual closed patterns at the same time an MQ-9 aircraft was conducting visual closed patterns. Civilian aircraft rarely conduct closed patterns at RGAA and this restriction is not expected to result in frequent ATC denials of requests to enter the pattern.

RGAA currently supports approximately 51 sorties and 81 closed patterns per average busy flying day (USACHPPM, 2008). The proposed addition of 1.5 sorties and 3 visual closed patterns per day would be an increase of approximately 1 percent in both sorties and closed patterns flown. This increase would not be expected to necessitate any alterations to current air traffic control procedures. Runway clearance delays resulting from MQ-9 operations would be expected to be infrequent and of minimal duration.

Under the Proposed Action, MQ-9 aircraft would conduct flight training in R-6302A/B/C/D/E for approximately 1,688 hours per year and, for the purpose of this analysis, it was assumed that some portion of all four subunits of R-6302 would be scheduled to accommodate each MQ-9 sortie. In FY 2009, R-6302A was used for 8,760 hours (every hour of every day). However,

MQ-9 aircraft would be able to use R-6302 subunits simultaneously with other military units and training time for the MQ-9 aircraft would be expected to overlap with existing training. Safe simultaneous training can occur when users are de-conflicted through the use of “blocking”. Blocking is a techniques that is used currently in this airspace and entails designating a horizontally and/or vertically-defined portion of the airspace for use by one user. Other users are excluded from this defined volume of airspace until the airspace is clear. For example helicopter units, typically operate at altitudes below 2,000 AGL. MQ-9 aircraft, which typically operate at altitudes of between 5,000 and 30,000 MSL could be de-conflicted from helicopter unit training without limiting either user’s operational training profile. In some cases, MQ-9 training would be integrated with other air- and ground-based units necessitating an overlap in scheduled airspace time. Military air traffic entering R-6302 via MTRs would typically be at low altitudes and MQ-9 operations would also not be expected to interfere with these operations. The net result of simultaneous training in the airspace would be to reduce the total number of hours in which R-6302 subunits would be utilized to somewhat less than the numbers listed in Table 4.4-1 in the “Proposed Action Hours Used” column. Predator training would not be expected to result in scheduling challenges that cannot be surmounted using existing scheduling processes.

**Table 4.4-1. Utilization of R-6302A/B/C/D/E Under
Baseline Conditions and the Proposed Action**

<i>Restricted Area</i>	<i>Baseline Hours Used</i>	<i>Proposed Action Hours Used*</i>
R-6302A	8,760	8,760
R-6302B	13	1,701
R-6302C	227	1,915
R-6302D	407	2,095
R-6302E	0	1,688

Notes: * In many cases, Predator training would be conducted concurrently with other training activities. Therefore, the number of hours in which the airspace is used could be lower, but would not be expected to be higher than indicated in the table. In R-6302A, Predator training would need to overlap with other airspace uses, as the airspace was used during every hour of every day in FY 2009 (baseline conditions)

Source: Fort Hood 2009

MQ-9 aircraft would utilize R-6302 altitudes not frequently used by the majority of current airspace users. Fort Hood Range practices real-time airspace management and airspace that is not activated is release to the ARTCC (Houston Center) for civilian use. Typically, altitudes greater than 12,000 MSL are released continuously and activated only when needed (Ulrigg, 2009). Under the Proposed Action, the altitudes between 12,000 MSL and 30,000 MSL would be activated more often than they are currently. No victor airways or jet routes traverse R-6302. Routing of air traffic either over or around this block of airspace while the airspace is being utilized would not be expected to result in substantial delays for civilian aircraft. Fort Hood Range Control would continue to utilize real-time airspace management to maximize airspace utility for both military and civilian users.

1 In the extremely rare event that the MQ-9 data link was lost during flight, the MQ-9 aircraft
2 would automatically follow established “lost link” procedures. These procedures involve the
3 aircraft entering a defined circling flight pattern located within R-6302 or RGAA Class D
4 airspace. The aircraft would continue to circle until the data link could be re-established.

5 RGAA and R-6302 have been successfully used for RPA operations for several years. Increased
6 RPA operations could potentially reduce availability of portions of the R-6302 and the RGAA
7 aerodrome to other users, but these reductions would be minimal. Overall, impacts to airspace
8 management at RGAA and R-6302 would be insignificant in nature.

9 4.4.1.2 Fort Polk AAF and R-3804A/B

10 Fort Polk AAF currently supports operations of the RQ-7 “Shadow” RPA, which operates under
11 an FAA-approved COA. Under the Proposed Action, a new COA would be required for the
12 operation of MQ-1 “Predator” aircraft. Many of the operational provisions stated in the RQ-7
13 COA would be expected to also be included in the MQ-1 COA. Other aircraft would be
14 expected to be allowed to use Fort Polk AAF Class D airspace under certain constraints while.

15 The number of sorties flown per average busy day at Fort Polk AAF would increase by 15
16 percent from 10 to 11.5 under the Proposed Action. Closed patterns would increase by
17 approximately 7 percent from 35 to 37 per average busy day. The total number of aircraft
18 operations in the Fort Polk AAF aerodrome under baseline and proposed action conditions are
19 relatively low and MQ-1 operations are not expected to result in frequent scheduling conflicts
20 with other users of the airfield. Currently, when Unmanned Aerial System (UAS) flying
21 operations are under way and manned aircraft require access to terminal airspace, the UAS is
22 flown to a pre-designated holding pattern within R-3804 and maintains the holding pattern until
23 manned aircraft operations are complete. Civilian aircraft operations at Fort Polk AAF are rare,
24 on the order of 12 operations per year (Garner, 2011) and de-confliction of civilian operations
25 and UAS operations would not be expected to be problematic.

26 Under the Proposed Action, MQ-1 aircraft would conduct flight training in R-3804A/B for
27 approximately 1,688 hours per year. For the purposes of this analysis, it was assumed that both
28 of the R-3804 sub-units would be reserved for every one of the hours of MQ-1 training. In fact,
29 MQ-1 aircraft would not be expected to spend extended periods of time in R-3804B because that
30 airspace unit does not include the altitudes at which the MQ-1 typically conducts training (5,000
31 MSL to 15,000 MSL). In addition, MQ-1 training in R-3804 would often occur simultaneously
32 with other training events in the same airspace. This overlap of training events, made possible
33 by the use of vertical and/or horizontal segregation of the airspace known as “blocking”, has the
34 net effect of reducing airspace usage time from the numbers shown in Table 4.4-2. This
35 technique would be expected to be particularly useful in R-3804 because many of the current

users of R-3804 (e.g. helicopters, ground-based units) do not require altitudes at which the MQ-1 would typically operate. Training operations on IR-165, which passes through R-3804, would not be expected to be affected by MQ-1 operations because traffic on the IR would normally be well below MQ-1 training. Under the “worst-case” scenario, utilization of R-3804A could increase from 871 hours to 2,559 hours annually and utilization of R-3804B could increase from 4,739 hours to 6,427 hours annually.

Table 4.4-2. Utilization of R-3804A/B Under Baseline Conditions and the Proposed Action

<i>Restricted Area</i>	<i>Baseline Hours Used</i>	<i>Proposed Action Hours Used*</i>
R-3804A	871	2,559
R-3804B	4,739	6,427

Note: * In many cases, MQ-1 training would be conducted concurrently with other training activities. Therefore, the number of hours in which the airspace is used could be lower, but would not be expected to be higher than indicated in the table
Source: Fort Polk 2008

R-3804A and R-3804B are reserved for continuous military use, but are released to the ARTCC when not activated. Increased activation of the 5,000 to 15,000 feet MSL block of R-3804A could result in civilian air traffic being vectored around or over the airspace that would otherwise have been vectored through the airspace. No victor airways or jet routes pass through R-3804. Routing of air traffic around the airspace that would otherwise have been able to pass through the airspace would result in only minor increases in travel time.

Fort Polk AAF and R-3804A/B have been successfully used for RPA operations for several years. While increased RPA operations could potentially reduce availability of portions of the AAF aerodrome and R-3804 airspace, these reductions would not be expected to result in significant scheduling or routing conflicts. Overall, impacts to airspace management at Fort Polk AAF and R-3804 would be insignificant in nature.

4.4.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

Under Alternative 1, the TXANG would operate MQ-1 as well as MQ-9 aircraft at Fort Hood, but all other elements of the action would be exactly the same as under the Proposed Action. MQ-1 aircraft operations would be similar to MQ-9 aircraft operations in terms of the flight procedures used and types of missions flown. The total number of sorties flown would remain the same under Alternative 1 as under the Proposed Action, with the only difference being that approximately half of the sorties would be flown by MQ-1 aircraft instead of MQ-9 aircraft. The MQ-1 aircraft would use lower altitudes on average than MQ-9 aircraft, but would still operate at altitudes above those used most frequently by current users of the airspace. An additional FAA-approved COA would be required to cover MQ-1 operations at Fort Hood. This COA would be expected to be similar to the MQ-9 COA described in Section 4.4.1.

4.4.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Predator LRE would not be established at RGAA or Fort Polk AAF. Flying operations would continue to occur as under baseline conditions. There would be no impacts to airspace management under the No Action Alternative.

4.5 NOISE

Significance Criteria

Noise associated with proposed aircraft operations and construction activities at Fort Polk AAF, R-3804, RGAA (Fort Hood), and R-6302 are considered and compared with current conditions to assess impacts. Data developed during this process may also support analyses in other resource areas. Noise calculations were accomplished using the computerized noise models Roadway Construction Noise Model, NOISEMAP, and MR_NMAP to model construction noise, aircraft noise near the base and aircraft noise in the airspace, respectively.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark referred to is a DNL of 65 dB, which for the purposes of this analysis is the threshold for significant impacts to the community. This threshold is often used to determine residential land use compatibility around airports, highways, or other transportation corridors. Two other average noise levels are also useful:

- A DNL of 55 dB was identified by the USEPA as a level “...requisite to protect the public health and welfare with an adequate margin of safety” (USEPA, 1974). Noise may be heard, but there is no risk to public health or welfare.
- A DNL of 75 dB is a threshold above which effects other than annoyance may occur. It is 10 to 15 dB below levels at which hearing damage is a known risk (OSHA, 1983). However, it is also a level above which some adverse health effects cannot be categorically discounted.

Public annoyance is the most common impact associated with exposure to elevated noise levels. When subjected to noise levels of 65 dB DNL, approximately 12 percent of persons will be “highly annoyed” by the noise. At levels below 55 dB DNL, the percentage of annoyance is correspondingly lower (less than three percent). The percentage of people annoyed by noise never drops to zero (some people are always annoyed), but at levels below 55 dB DNL it is reduced enough to be essentially negligible (Finegold *et al.*, 1994).

4.5.1 PROPOSED ACTION

4.5.1.1 Aircraft Operations

Fort Hood

The MQ-9 “Reaper” aircraft is powered by a single Honeywell TPE331 turboprop engine which is capable of generating 950 horsepower. Because source noise data for the Predator B has not yet been incorporated into the NOISEMAP NOISEFILE database, a surrogate noise source was used. The surrogate noise source selected, the Cessna 441, is powered by two TPE331 engines and noise analysis using this surrogate is expected to slightly overestimate noise impacts.

The MQ-1 “Predator” aircraft is powered by a four-cylinder Rotax 914F engine capable of generating 115 horsepower. The Rotax 914F is also used in several types of “ultralight” aircraft and snowmobiles. For the purpose of this analysis, noise levels for a generic single-engine, fixed-pitch propeller-driven aircraft (e.g. Cessna 172) were selected as a surrogate for MQ-1 noise. This selection is very conservative in that variable-pitch propeller-driven aircraft are typically powered by engines that are larger and louder than the Rotax used by the RQ-1.

L_{max} associated with MQ-9 MQ-1 aircraft as well as other military aircraft currently based at RGAA are presented in Table 4.5-1.

**Table 4.5-1. Maximum Sound Levels for Military Aircraft
Based at RGAA and the Predator Aircraft**

<i>Aircraft (in takeoff configuration)</i>	<i>L_{max} Values (in dB) at Varying Distances (in feet)</i>			
	500	1,000	2,000	5,000
MQ-9 ¹	79.4	73.2	66.7	57.4
MQ-1 ²	84.0	77.5	70.7	60.7
H-64	83.1	76.4	64.6	58.4
C-12	79.4	73.2	62.7	57.4
H-47	80.1	73.2	60.9	54.3
Learjet-25	112.5	105.5	92.0	84.8
H-60	78.9	72.0	59.6	52.7

Note: 1. Cessna 441 “Conquest” was used as surrogate noise source for the MQ-9 aircraft

2. Generic Single-engine, variable-pitch propeller-driven aircraft was used as surrogate noise source for the MQ-1 aircraft
dB – decibel; L_{max} – Maximum Sound Levels; RGAA – Robert Gray Army Airfield.

Source: SELCALC computer program

Under the Proposed Action, MQ-9 aircraft would be expected to fly an average of 1.5 sorties and 3 closed pattern operations per average busy flying day week at RGAA. None of these sorties would be flown during the “late-night” period between 10:00 PM and 7:00 AM. Data on hypothetical future MQ-9 operation was entered into the NOISEMAP computer program to derive DNL noise levels reflecting RGAA after implementation of the Proposed Action. Baseline and Proposed Action noise contours at RGAA are shown at Figure 4.5-1.

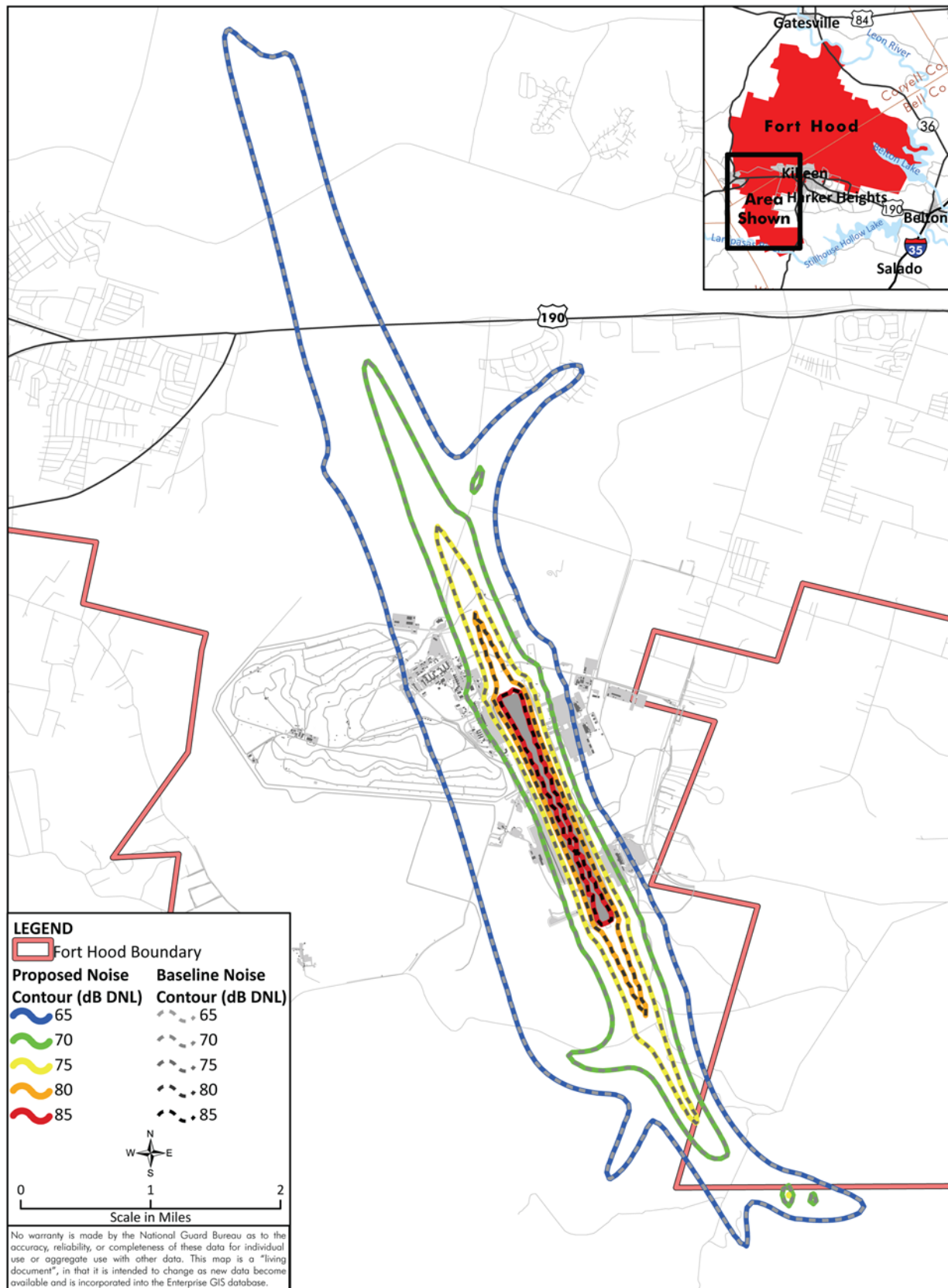


Figure 4.5-1. Baseline and Proposed Noise Contours at RGAA

Noise levels under the Proposed Action would be almost exactly the same as under baseline conditions. The MQ-9 is a relatively quiet aircraft (see Table 4.5-1) and the number of sorties flown would be low in comparison to total aircraft operations being flown currently at RGAA. Increases in noise level of less than 1 dB are typically not noticeable. Increases in noise level associated with the Proposed Action would be less than 1 dB, and would not result in any significant noise impacts.

Construction

The Proposed Action involves construction of up to a 30,000 square foot hangar and paving of up to 15 acres in the vicinity of the hangar. Construction noise would involve some use of heavy construction equipment. Equipment used would be expected to include but not be limited to: a backhoe, cement mixer, pickup truck, and generator. Noise associated with the proposed construction and demolition was estimated using the Federal Highway Administration's Roadway Construction Noise Model (RCNM). Noise levels in the model originated from data developed by the USEPA, and were refined using a standard "acoustical usage factor" to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during the project (U.S. Department of Transportation, 2006). For the purposes of modeling, it was assumed that all construction would occur between the hours of 7:00 AM and 5:00 PM (normal working hours). Table 4.5-2 shows maximum sound levels associated with the operation of heavy construction/demolition equipment typically used for this type of construction project.

If all of the pieces of equipment listed in Table 4.5-2 were to be used during a single day at a single construction site, the DNL noise level generated would be approximately 61 dB at a distance of approximately 500 feet from the edge of the construction site. This noise scenario is conservative in that construction is typically phased, with different pieces of equipment being used on different days.

Table 4.5-2. Equipment Noise Levels

<i>Equipment</i>	<i>Distance From Project Site</i>	
	100 Feet	500 Feet
Backhoe, dB L _{max}	72	58
Concrete Mixer Truck, dB L _{max}	73	59
Pickup Truck, dB L _{max}	69	55
Generator, dB L _{max}	75	61
Total, dB L _{max} (all equipment operating on same day)	75	61
Total, dB DNL (all equipment operating on same day)	75	61

Notes: dB – decibel; DNL – Day-Night Average Sound Level; L_{max} – Maximum Sound Levels.

Source: U.S. Department of Transportation 2006.

Construction noise would be noticeable in the immediate vicinity of the project sites and persons exposed to the construction noise at close range may become annoyed. However, the annoyance

1 would be temporary, as noise would last only for the duration of the project. Construction
2 workers would be required to wear hearing protection, in accordance with Occupational Safety
3 and Health Administration (OSHA) regulations.

4 ***R-6302A/B/C/D/E Airspace***

5 Under the Proposed Action, MQ-9 aircraft would carry out 6-9 training sorties in R-
6 6302A/B/C/D/E per week. The training mission would involve the aircraft cruising at altitudes
7 between 5,000 and 30,000 feet MSL. As ground elevation beneath R-6302A/B/C/D/E is
8 approximately 1,000 feet MSL, these altitudes equate to the Predator aircraft flying at between
9 approximately 4,000 feet AGL and 39,000 feet AGL. As mentioned previously, the MQ-9
10 aircraft is a propeller-driven aircraft. Maximum noise levels generated by the MQ-9 aircraft at its
11 lowest operational altitude of approximately 4,000 feet AGL would not be expected to exceed 58
12 dB directly below the aircraft. MQ-9 noise levels were estimated using the SELCALC computer
13 program with the Cessna 441 aircraft acting as surrogate noise source. Individual overflights
14 would be noticeable, particularly to persons in rural areas, and could potentially be mildly
15 annoying to persons beneath the airspace. However, the airspace is currently used by several
16 aircraft that are significantly louder than the MQ-9. For example, the AH-64 “Apache”
17 helicopter flying at 500 feet AGL (a common operating altitude) generates a maximum noise
18 level on the ground of approximately 87 dB. Taken in the context of other aircraft and munitions
19 training activity currently under way in R-6302A/B/C/D/E, the relatively high-altitude MQ-9
20 training operations would not be expected to be viewed as intrusive.

21 Time-averaged MQ-9 operational noise levels were estimated using the computer program
22 MRNMAP and found to be less than 35 dB DNL_{mr}. This noise level was estimated based on 6-9
23 Predator sorties per week averaging 6.25 hours in duration with no sorties occurring in the “late-
24 night” period between 10:00 P.M. and 7:00 A.M. The T-6 “Texan” aircraft was selected from
25 noise sources available in the program MRNMAP to represent MQ-9 aircraft as a noise
26 surrogate. MQ-9 flight tracks within the airspace would be essentially randomly distributed.
27 This noise level is well below the 55 dB DNL_{mr} threshold below which no adverse impacts are
28 expected to occur (USEPA, 1974). Furthermore, other military training activities in the airspace
29 and on the underlying training range would often be substantially louder than the MQ-9 flight
30 training, often “drowning out” MQ-9 flight noise while they are underway. MQ-9 noise could
31 potentially be noticed and result in minor annoyance in persons on the ground, but overall noise
32 impacts would be minor and insignificant in nature.

Fort Polk

Aircraft Operations

Like RGAA, Fort Polk AAF is an active military airfield supporting the flying operations of several types of aircraft. Under the Proposed Action, MQ-1 aircraft would be beddown at Fort Polk AAF. Table 4.5-3 shows L_{max} associated with the MQ-1 aircraft as well as other aircraft that are currently based at Fort Polk AAF. MQ-1 aircraft noise is represented using the generic single-engine, fixed-pitch propeller-driven aircraft (e.g. Cessna 172).

Table 4.5-3. Maximum Sound Levels for Military Aircraft Based at Fort Polk AAF

<i>Aircraft (in takeoff configuration)</i>	<i>L_{max} Values (in dB) at Varying Distances (in feet)</i>			
	500	1,000	2,000	5,000
MQ-1 ¹	84.0	77.5	66.5	60.7
H-64	83.1	76.4	64.6	58.4
C-12	79.4	73.2	62.7	57.4
C-130	91.5	84.6	72.5	66.3
H-47	80.1	73.2	60.9	54.3
OH-58	76.4	69.8	58.4	52.3
OH-58D	79.7	72.9	60.7	54.0
H-60	78.9	72.0	59.6	52.7
H-1	82.8	76.4	65.6	60.2

Notes: dB – decibel; L_{max} – Maximum Sound Levels; AAF – Army Air Field

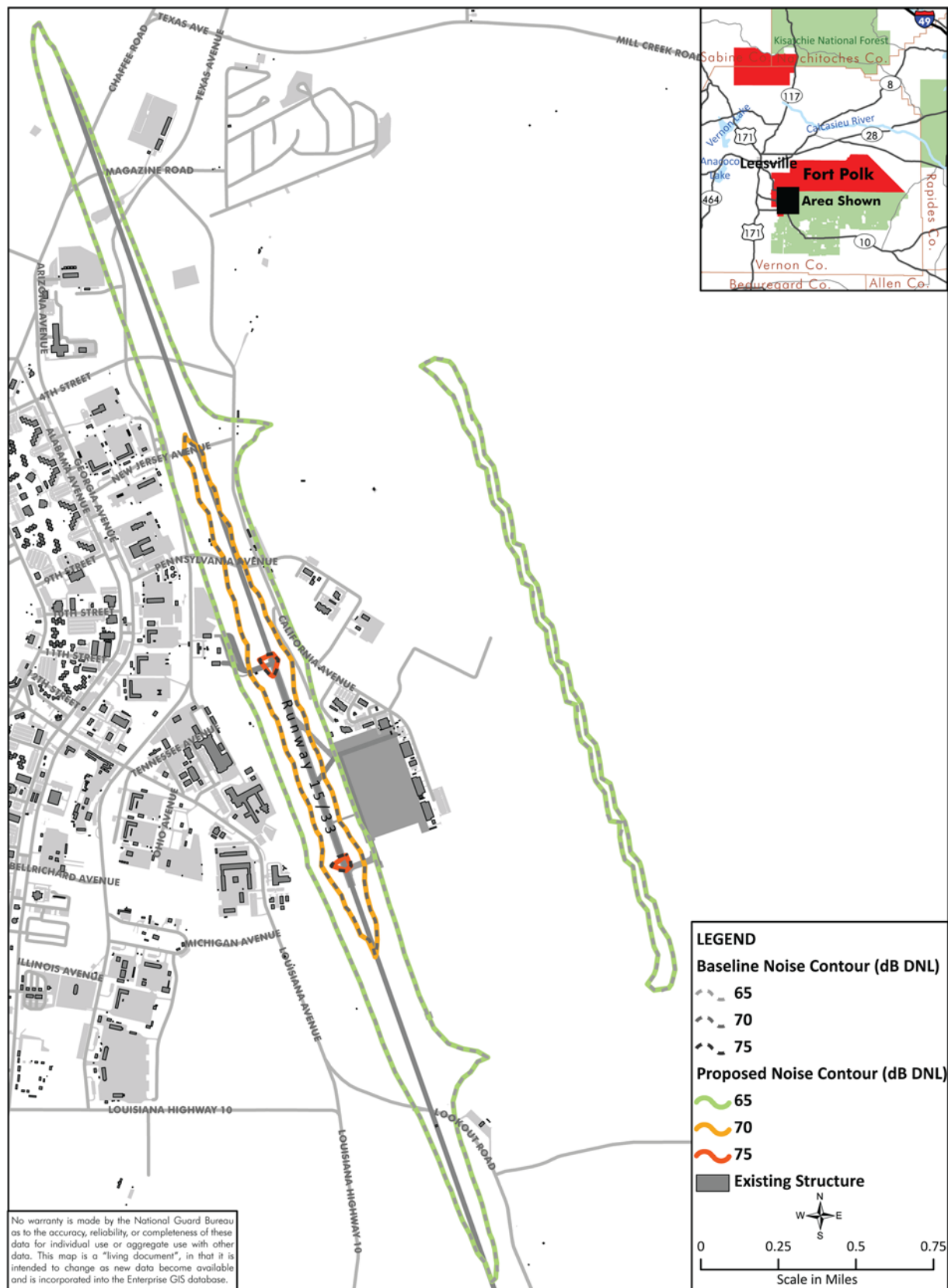
Generic Single-engine, variable-pitch propeller-driven aircraft was used as surrogate noise source for the Predator aircraft

Source: SELCALC computer program

Under the Proposed Action, MQ-1 aircraft would fly 1.5 sorties and 3 closed pattern operations per average busy flying day at Fort Polk AAF and none of these operations would occur between 10:00 P.M. and 7:00 A.M. Detailed operational data on proposed future MQ-1 operations were entered into the NOISEMAP. Proposed MQ-1 aircraft alone would not yield noise levels exceeding 65 dB DNL. The Predator aircraft operations, when added to baseline aircraft operations at Fort Polk AAF, would result in an increase in noise level that would not be noticeable (less than 1 dB DNL). Figure 4.5-2 shows noise contours under baseline conditions and the Proposed Action.

Construction

The Proposed Action involves construction of two concrete pads, secure utilities and communications conduit, and enclosure of an open structure that would be used as the MQ-1 hangar. It is expected that the same types of construction equipment that would be used at RGAA would also be used at Fort Polk AAF. Noise impacts associated with construction at the two bases would also be similar. No effects other than some potential for annoyance in persons spending large amounts of time near the construction sites would occur. The annoyance would be temporary, lasting only for the duration of the project. Construction workers would be required to wear hearing protection, in accordance with OSHA regulations.



R-3804A/B Airspace

Under the Proposed Action, MQ-1 aircraft would fly approximately 6-9 sorties per week in R-3804A/B and each sortie would last an average of 6.25 hours. Flight tracks within the airspace would be essentially random over extended periods of time. Sorties would be flown at altitudes between 5,000 and 15,000 feet MSL and would not take place after 10:00 PM or before 7:00 AM.

Maximum Noise levels associated with direct overflights by MQ-1 aircraft would not be expected to exceed 61 dB. Individual overflights would be noticeable, particularly to persons in rural areas, and could potentially be mildly annoying to persons beneath the airspace. The airspace is used by several other types of aircraft and the underlying training range is used by air and ground units for live munitions delivery training. These other training events would typically be much louder than the relatively high-altitude MQ-1 aircraft flying operations.

Time-averaged noise levels associated with MQ-1 sorties were estimated using the same methodology described for noise analysis in R-6302A/B/C/D/E. The proposed MQ-1 operations would generate a noise level in R-3804A/B of less than 35 dB DNL. This noise level is well below the 55 dB DNL_{mr} threshold below which no adverse impacts are expected to occur (USEPA, 1974). In addition, R-3804A/B is currently utilized by a variety of aircraft types including the A-10, F-15, F-16, F/A-18, B-1, B-2, B-52, GR-4, GR-7, AH-1, AH-6, AH-64 (Fort Polk, 2008). Other military training activities in the airspace and on the underlying training range would often be substantially louder than the MQ-1 flight training, often “drowning out” Predator flight noise while they are underway. Overall, noise impacts associated with the proposed training would be minor and insignificant in nature.

4.5.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

Under Alternative 1, the TXANG would operate MQ-1 as well as MQ-9 aircraft at Fort Hood, but all other elements of the action would be exactly the same as under the Proposed Action. All noise impacts at Fort Polk, as well as construction noise impacts at Fort Hood, would be exactly as described for the Proposed Action. The total number of additional airfield operations conducted at Fort Hood would be the same under Alternative 1 as under the Proposed Action, with the only difference being that approximately 50 percent of those operations would be conducted by MQ-1 aircraft instead of MQ-9 aircraft. Both the MQ-1 and MQ-9 are relatively quiet as compared to several of the military aircraft currently using the airfield and training airspace. Noise conditions under Alternative 1 at RGAA were calculated using NOISEMAP and noise contours under Alternative 1 and baseline conditions are shown in Figure 4.5-3. Change in time-average noise levels would be extremely minimal and noise levels would increase by a degree not expected to be noticeable (< 1 dB). Noise levels beneath the training airspace (R-6302) under Alternative 1 would remain below 35 dB DNL. Overall, noise impacts would be minor and insignificant in nature.

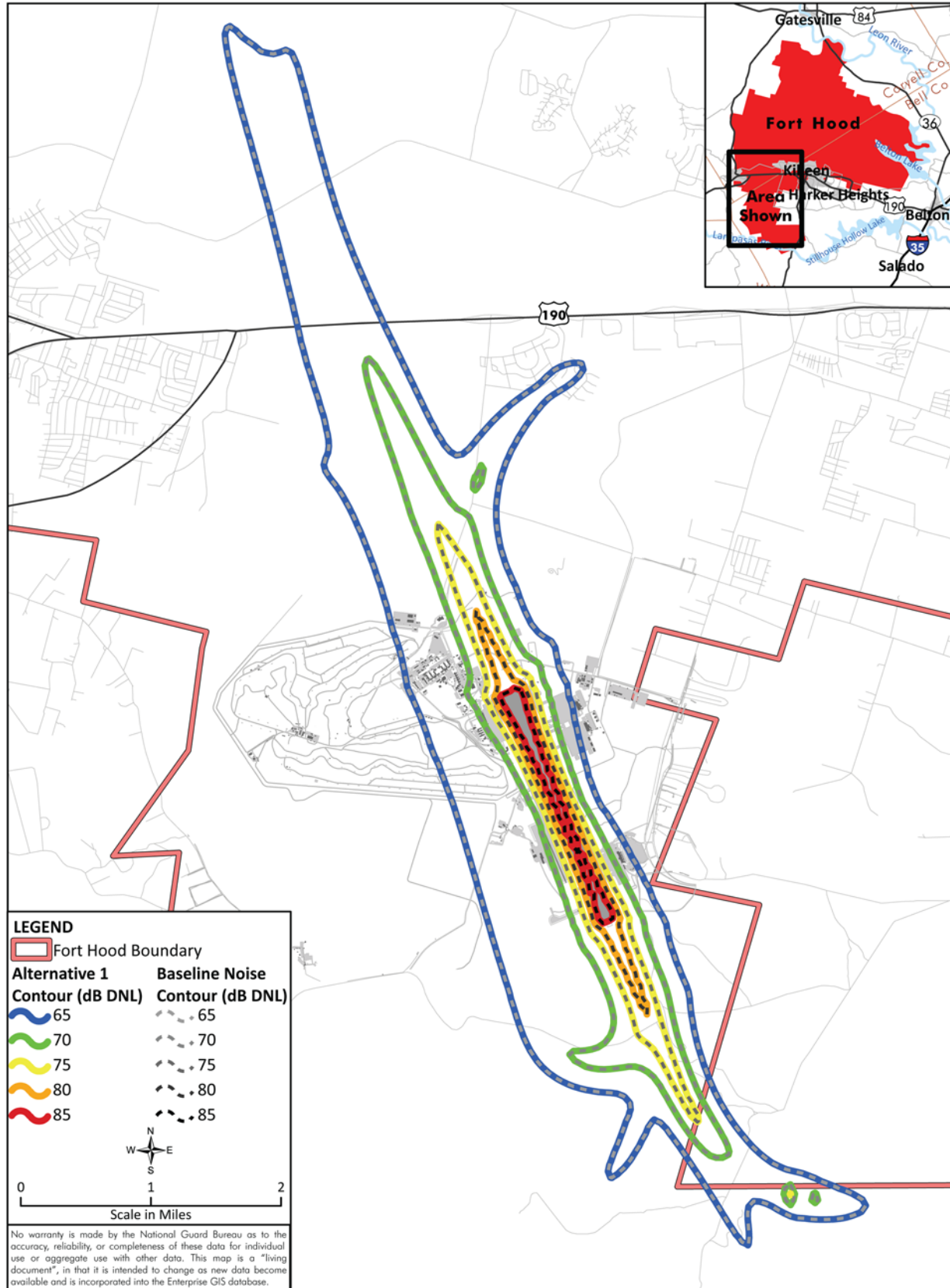


Figure 4.5-3. Noise Contours at RGAA under Baseline Conditions and Alternative

4.5.3 NO ACTION ALTERNATIVE

There would be no noise impacts under the No Action Alternative. Under the No Action Alternative, there would be no construction or demolition noise and MQ-1/MQ-9 operations would not occur at either Fort Hood or Fort Polk. Noise levels would remain as they are currently.

4.6 SAFETY

4.6.1 METHODOLOGY

The establishment of proposed Restricted Areas would support flight activities of RPA which do not currently have the authority to fly under see-and-avoid conditions in MOAs. The proposed airspace is designed with altitude blocks and geographic overlays so that units of the airspace could be activated and other units deactivated to support civil aviation and decrease the potential for mid-air collisions. When activated, the proposed RA would not allow nonparticipating IFR or VFR flight operations in the RAs. Proposed Action

4.6.1.1 Flight Safety

The use of RPA, like other aviation technologies, poses a potential harm to the general public. This potential harm is measured by the metric of risk, which is defined as both the “likelihood of an accident, and the severity of the potential consequences.” While RPA share inherent characteristics with other aircraft, RPA accidents differ fundamentally from other aviation accidents. Generally historic RPA accidents occur as a result of three major causes: Human, material, and communication factors. Human-related factors are the most common.

Like any other aircraft, it is impossible to predict the precise location of a RPA accident, should one occur. Major considerations in any accident are loss of life and damage to property. The probability of an RPA crashing into a populated area is extremely low but like other aircraft, it cannot be totally discounted. Several factors are relevant in the ROI: the RAs which will be utilized for Predator/Reaper operations have relatively low population densities. Also the unique nature of RPA operations and the relative size and speed of the RPA would lessen the impact of a potential RPA crash.

Fort Hood, RGAA

RGAA is located 5.3 nm from restricted Airspace and has an existing site specific COA that allows RPA operations from RGAA Class D/E airspace to the restricted area. A new COA would be required for TXANG MQ-1 operations transiting to the Restricted Airspace. The current COA requires a spotter each mile until reaching restricted airspace. Hence, Predator Operations would

1 require a total of three spotters for launch and recovery and this practice would continue for
2 TXANG RPA operations

3 ***Fort Polk AAF***

4 Predators operations at Fort Polk would require a runway extension or a waiver to operate from a
5 shorter runway. Ft Polk AAF has an operating control tower, Class D airspace that is non-joint
6 use. Approved procedures (Army and USAF) will be developed by the local air traffic control
7 personnel to allow RPA operations in Class D non-joint use airspace. Fort Polk already has a
8 COA for their on-going activities. A COA from the FAA specific for Class D airspace will be
9 required for TXANG RPA operations. All documentation has been submitted and the 147 RW is
10 awaiting the COA from the FAA for operations at Fort Polk.

11 A spotter will be required during Predator operations in the Class D airspace. Restricted Area R-
12 3804A is located adjacent to the airfield. The Restricted Airspace (R-3804) goes up to FL 180.
13 R-3803A and R-3804A are also live fire areas. The Restricted Area above these impact areas
14 extends from surface to Flight Level 230. Live fire operations from the Predators are not planned
15 for training activities conducted by the TXANG

16 Restricted Area R-3804A is located adjacent to the airfield. Two other restricted areas are
17 located in the Ft Polk airspace complex. They can be accessed by climbing into the Class A
18 airspace (18-21K Lancer ATCAA) and transitioning between the restricted areas. A COA from
19 the FAA is required to fly RPA in Class A airspace. A COA must be obtained from the FAA to
20 transition between the restricted areas below 18K in the Warrior MOA. A chase aircraft may be
21 required as part of the COA submitted to the FAA for operations outside of any Restricted Areas.
22 Chase aircraft fly in close proximity to the RPA and carry a qualified observer and/or RPA pilot.
23 They keep visual contact with the RPA at all times to help ensure flight safety.

24 ***RPA Accident Potential***

25 The Air Force calculates Class A mishap rates per 100,000 flying hours for each type of aircraft
26 in the inventory. The Class A mishap rate per 100,000 flying can be used to compute a statistical
27 projection of anticipated time between mishaps.

28 The Predator has been in operation since 1997. From 1997 through October 2010, the aircraft
29 flew approximately 815,760 hours, resulting in a total of 76 Class A mishaps. This is an average
30 of one mishap every 10,733 flight hours. The Reaper has been in operation since 2004. Through
31 October 2010, the Reaper had flown approximately 101,920 hours with 11 Class A mishaps,
32 equivalent to one mishap every 9,265 flight hours (USAF, 2011).

1 The Predator/Reaper RPAs would be scheduled to fly approximately 2,000 hours annually (250
2 annual sorties x 8 hours per sortie). Based on the mishap history for both aircraft, there is a
3 potential for a Class A mishap to occur approximately once every five years.

4 The DoD has implemented a formal training program for RPA pilots that includes classroom,
5 simulator, and actual flight training on the RPA. This formalized training would enhance the safe
6 operation of the RPA. Additionally, current safety policies and procedures at each installation
7 are designed to ensure that the potential for aircraft mishaps is reduced to the lowest possible
8 level. These safety policies and procedures would continue under the Proposed Action.

9 Because RPAs operate at lower speeds and have smaller profiles than manned aircraft, the
10 potential for BASH causing catastrophic damage would be expected to be extremely low.

11 ***RPA Command and Control***

12 Ensuring uninterrupted command and control for a RPA is important because without it, the
13 RPA could collide with another aircraft or, if it crashes to the earth, cause injury or property
14 damage.

15 Predator/Reaper aircraft have pre-programmed maneuvers to follow if the command and control
16 link becomes interrupted (called a “lost-link scenario”). A lost-link can occur if communication
17 is lost from a satellite, from a ground station, or within the aircraft. In nearly all cases,
18 communication can be restored from an alternate ground location or using an alternate satellite
19 network. If communication cannot be restored immediately, the RPA will enter a flight path
20 known as the lost-link profile, which is predetermined and performed autonomously, until the
21 GCS operation can be restored and a data link can be reestablished. The lost-link profile,
22 including the initial lost-link heading and altitude, is uploaded to the RPA before each mission
23 and updated frequently throughout the flight.

24 In the unlikely event that communication between control personnel could not be maintained
25 through primary or secondary systems, the Predator would proceed to its pre-programmed
26 controlled landing point and, if aircraft condition allows, the aircraft would be landed safely.
27 Otherwise, the aircraft would loiter at this location until its fuel was consumed. At that time, the
28 aircraft would be allowed to crash land into the pre-established cleared area below. The pre-
29 programmed controlled landing point for the aircraft would be within the Restricted Areas.

30 ***Frequency***

31 RPA command and control equipment would use radars and communications that emit
32 electromagnetic radiation frequencies. Modern communication and radar transmitters can
33 produce electromagnetic environments that are potentially hazardous to ordnance. Subsequently,

1 the siting of the communications and tracking equipment and facilities would need to consider
2 proximity to ordnance storage and UXO areas under the Hazards of Electromagnetic Radiation
3 programs. The restricted airspace unit selected for RPA operations would guide the general
4 location of RPA facilities. Due to the potential for conflicts with other range users in terms of
5 airspace and radio frequency use, coordinated siting is a key consideration.

6 RF frequency guidance and allocations have been issued by the U.S. Military Electronics
7 Communications Board for the command and control equipment use for the RPA systems
8 proposed for both locations will assure safe operations and deconfliction with other frequency
9 spectrum users.

10 Training activities generally do not pose an interference threat to civilian ATC radar systems.
11 ATC radars generally operate in the 2,000 – 5,000 MHz range, not within the frequencies
12 affected by most Fort Hood and Fort Polk emissions, including those from restricted radar use.
13 The Air Force restricts emissions to narrow frequency bands that do not affect ATC radar in
14 accordance with DoD regulations and the National Telecommunications and Information
15 Administration “Manual of Regulations and Procedures for Federal Radio Frequency
16 Management” (Department of Commerce, January 2009).

17 Fort Hood and Fort Polk personnel would de-conflict and monitor the use of frequencies for
18 communication and tracking purposes in accordance with existing procedures, and provide
19 authorizations and restrictions on a mission-by-mission basis as needed. TXANG would
20 continue to comply with all applicable laws, regulations, MOUs, and interagency agreements
21 regarding the use of frequency bands, and plan all missions to ensure that harmful interference to
22 military and civilian networks and electronic systems is avoided. Under the continuation of
23 current activities, it is unlikely that new transmission systems or use of new frequency bands
24 would be introduced that could not be managed under current procedures.

25 *Ground Safety*

26 The Post fire departments provide fire and crash response at both Fort Hood and Fort Polk. Both
27 fire departments are also parties to mutual-aid agreements with the local fire departments, thus
28 ensuring availability of additional support if required. Post and off-base fire departments are
29 trained and equipped to provide emergency services as needed in the unlikely case of an RPA
30 mishap. No significant adverse impacts to ground safety are anticipated from implementation of
31 the Proposed Action.

32 No significant adverse impacts to safety are anticipated from implementation of the Proposed
33 Action.

4.6.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

There are no environmental consequences associated with the Safety resource area for Alternative 1 not previously discussed under the Proposed Action. As such, no adverse impacts would occur.

4.6.3 NO ACTION ALTERNATIVE

Under the No Action Alternative Predator LRE training would not be conducted at Fort Hood or Fort Polk. However, both installations would continue to perform on-going aircraft and RPA training according to established procedure.

4.7 HAZARDOUS MATERIALS AND WASTES

Significance Criteria

A significant impact would occur if the quantities or types of hazardous materials used or hazardous waste generated violated federal or state standards, could not be accommodated at the host installation or if policy and procedures to handle hazardous materials/waste are not in place; thereby increasing the risk to the public or the environment. An increase in solid waste disposal would be considered significant if local landfills were unable to accommodate the amount of waste generated or if the remaining capacity of any landfills would be greatly reduced.

4.7.1 PROPOSED ACTION

Hazardous Materials/Waste Management

No significant or adverse effects would be expected at either installation from the storage, use and disposal of hazardous materials and waste. Long-term minor effects would be expected from the use of hazardous materials and disposal of hazardous wastes as a result of aircraft maintenance activities. Of these effects, the most notable would likely be associated with the inherent risk of a release or accident involving the storage or transfer of fuels.

Fuel for the aircraft would be stored and dispensed from two 400 gallon aboveground tanks equipped with secondary containment. The storage, handling and use of fuel would be done in accordance with the installation's HWMP, SPCC Plan, and associated Army policy and procedures. The proposed storing and dispensing of fuel may also be required to be permitted under the Fort Polk's Title V air permit.

Additionally, TXANG personnel would conduct minor maintenance of the aircraft at the host installation, such as battery replacement and oil changes. These activities would be consistent with those currently employed at the installations for similar operations. Each aircraft utilizes

two nickel cadmium batteries and oil changes would be conducted at an estimated rate of three to four quarts of oil per week (approximately 52 gallons per year). The aircraft would be transported to Ellington Field JRB for any major maintenance requirements, such as engine overhauls.

Hazardous wastes generated from maintenance activities at the host installations would not be transported to Ellington Field JRB for disposal. All hazardous wastes would be disposed of in accordance with the host installation's hazardous waste management systems. Hazardous wastes generated at Fort Polk, such as spent batteries and waste associated with maintenance activities, would not be stored on the installation for longer than 90 days from the time the waste is generated.

Comprehensive Army environmental policies, regulations, and guidelines are in place, which, in the past have proven to be adequate to provide for their management in an environmentally sound manner. Activities would follow the label instructions for storage, use, application, and disposal in accordance with proper hazardous material management guidelines. These actions have the same requirements with respect to compliance with federal and state hazardous and solid waste management laws and regulations. Any hazardous material or hazardous waste used or generated as part of these actions would be managed in accordance with current regulations. Existing installation policies and procedures (the *Hazardous Waste Management Plan*; *Oil and Hazardous Substances Contingency Plan*; *SPCC Plan*; and *Installation Spill Contingency Plan*) are sufficient to properly manage any changes in current quantities or disposition of hazardous materials or wastes generated as a product of the Proposed Action. Therefore, no significant effects associated with the storage, handling, and use of hazardous materials and wastes in these areas would be expected with implementation of the Proposed Action are expected.

Solid Waste

Municipal Solid Waste

Municipal solid waste is made up of household generated trash, refuse, or garbage and includes paper, metal, cardboard, putrid waste (e.g., discarded food scraps), wood, plastics, and yard wastes. The latest available statistics were published by the USEPA in *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2003* (USEPA, 2005). Based upon this guidance document, the average generation rate for municipal solid waste is 4.5 pounds per person per day. To evaluate solid waste impacts, this generation rate was multiplied by the number of personnel (20) and the estimated number of days per year the personnel would be staying on the installation (180). This equates to approximately 8.1 tons of municipal solid waste generated annually at the host installation.

At Fort Hood, this would result in a 0.03 percent increase in municipal solid waste disposed of at the landfill annually. This increase is considered minimal and would not have long-term significant or adverse effects to the remaining capacity of the Fort Hood landfill. Similarly, at Fort Polk, the increase in municipal solid waste would have a minor impact on the remaining capacity of the IESI landfill. Additionally, recycling practices would reduce the actual amount of municipal solid waste disposed at either landfill. Therefore, no long-term significant effects from solid waste are expected.

Construction/Demolition Debris

C&D debris includes materials such as construction materials for buildings, concrete and asphalt rubble, and land-clearing debris. Sampling studies documented in *Characterization of Building-Related Construction and Demolition Debris in the United States* (USEPA, 2003) indicate that the solid waste generation rate during nonresidential construction activities is 4.34 pounds per square foot (lbs/ft²) of debris within the U.S. Estimated quantities of C&D waste generated from each type of activity were established using the following equations:

No building construction would occur at Fort Polk as a result of the Proposed Action. At Fort Hood, up to a 30,000-square foot hanger would be constructed. Using the value of 4.34 lbs/ft² to estimate resulting construction-related debris, approximately 65 tons of debris would be generated.

A large percentage of C&D debris is concrete, which can be recycled. Recycled concrete is typically crushed and used for various purposes (including road base). Recycling practices would reduce the amount of actual C&D materials disposed of in landfills. However, even without recycling, impacts to the local landfill would be significant. The remaining capacity of the landfills and recycling programs at the installations would easily accommodate the increase in solid waste generated by construction activities associated with the Proposed Action.

4.7.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

There are no environmental consequences associated with the Hazardous Materials and Wastes resource area for Alternative 1 not previously discussed under the Proposed Action. As such, no adverse impacts would occur.

4.7.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, Fort Hood and Fort Polk would continue to use hazardous materials and generate hazardous/solid wastes as part of day-to-day operations to support various operations and maintenance activities. However, the TXANG would not conduct Predator LRE training or the associated maintenance activities and the proposed concrete pads would not be

constructed. Therefore, there would be no adverse impacts associated with hazardous materials/wastes and solid waste from implementation of the No Action Alternative.

4.8 SOCIOECONOMIC RESOURCES

Significance Criteria

In order to assess the potential socioeconomic and environmental justice impacts of the Proposed Action, employment, race, ethnicity, poverty status and age characteristics of populations in the ROI were analyzed, as presented in Section 3.8. Potential socioeconomic impacts are assessed in terms of the direct effects of the proposal on the effects on population and socioeconomic attributes. With regard to environmental justice issues, county figures are compared to state demographics, referred to as the Community of Comparison (COC) to determine proportional differences. If county figures exceed the COC than a disproportionate impact to populations of concern are anticipated. If the disproportionate impacts result in adverse human health or environmental damage than the activity is considered to be significant.

4.8.1 PROPOSED ACTION

Under the Proposed Alternative, approximately 8 to 15 TXANG personnel would permanently relocate to Fort Hood. In addition, up to 15 TXANG would travel from Ellington Field JRB to Fort Hood, Texas and Fort Polk, Louisiana for two weeks out of the month. On-base housing may be utilized but it is more likely that off-base housing will be utilized. The additional permanent and temporary personnel represent a very small percent of each county's population and the total ROI population. There are no significant impacts anticipated to housing since the local housing market can accommodate the anticipated population increase. Under the proposed alternative, no new jobs will be created. During the construction phase, there would be a temporary and minor positive economic benefit from the use of local labor and supplies. During the operational phase, the additional permanent and temporary personnel would contribute to the local economy from consumption expenditures but this would only represent a very minor economic contribution.

There is a potential for disproportionate impacts to children in Vernon Parish and Bell County and several minorities in the ROI under the Proposed Action. However, based on the conclusions that there would be no significant impacts anticipated from air quality (as detailed in Section 4.1), noise (as detailed in Section 4.5), or safety (as detailed in Section 4.6) under the Proposed Action, than it is also anticipated that any disproportionate impacts to environmental justice areas or special risks to children would also not be significant.

4.8.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

There are no environmental consequences associated with the socioeconomic resource area for Alternative 1 not previously discussed under the Proposed Action. As such, no adverse impacts would occur.

4.8.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the TXANG would not implement actions described in Section 2.1. Therefore, the local communities would not realize any benefits associated with construction or additional expenditures from the permanent and temporary personnel associated with the Proposed Action. Overall, implementation of the No Action Alternative would not result in any significant adverse socioeconomic or impacts. In addition, the No Action Alternative is not expected to create significantly adverse environmental justice impacts or special risks to children.

4.9 UTILITIES

This section discusses potential impacts to utilities, which include water supply, wastewater treatment, electricity and natural gas serving the existing and proposed project areas for RPA LRE training. Potential issues with utilities are expected to be minor, but there are guidelines and approved practices that must be observed to minimize the potential for effect. Issues evaluated in this section include the potential for the Proposed Action or No Action Alternative to exceed the utility capacity of a water, gas or electrical system; potential problems related to connecting to existing utilities during construction, or aesthetic impacts associated with the location of proposed communications equipment.

Impacts to utilities include the potential for disruption of utilities service and demand changes on the utility infrastructure. Impacts may arise from physical changes to circulation or utility corridors and introduction of construction-related traffic and utility use.

Under the Proposed Action, approximately 15 TXANG personnel would travel to either Fort Hood or Fort Polk two weeks a month, 12 months a year. Additionally, up to 15 personnel may be permanently stationed in Fort Hood.

The total population at Fort Polk, Louisiana is 9,792 persons (JRTC and Fort Polk, 2010) and Fort Hood has 50,343 active duty personnel (USAF, 2009). With a 5-day work week, the total number of days per year ANG personnel would be on travel is 180. Both the Fort Polk and Fort Hood installations are familiar with the increase and decrease in populations associated with the cycle of military deployments. The increase in personnel associated with RPA LRE training operations would represent far less than 1 percent of the total populations of either installation.

Significance Criteria

Impacts would be significant if the Proposed Action resulted in exceedence of capacity of a utility, or there were impacts to the host base mission. The requirement for routine digging permits or stormwater permits does not constitute a significant impact.

4.9.1 PROPOSED ACTION

The Proposed Action would require new utilities or connection to existing utilities, including electrical systems, fire detection and suppression, communication, mechanical and HVAC systems. The increased use of utilities from TXANG personnel is not expected to be significant, nor create any issues with regard to potable water, electrical, natural gas, wastewater demand or infrastructure at Fort Polk or Fort Hood.

Fort Polk

Water Supply

There would be a minor increase in water consumption related to the day-to-day activities of additional personnel traveling in support of the RPA training. Lodging would be off-base so the on base water consumption would be limited to use of water fountains and washroom facilities. During construction of the concrete pad, fugitive dust emissions may be controlled through water spray though this represents a temporary change in water use. Modifications to facilities include the addition or upgrade of fire response systems. Increased water use may occur through periodic testing of the systems. Table 4.9-1 provides estimated water consumption based on 15 persons travelling for 180 days per year. Results are provided as usage based on a U.S. average and also as Leadership in Energy and Environmental Design (LEED) standards baseline water consumption. The anticipated water usage is likely some amount between the U.S. average and LEED baseline. With a water supply capacity of 7,000,000 gallons at Fort Polk expected water consumption from the Proposed Action represents between .3 and .6 percent of the total capacity. Showers were not included in the on-base water usage calculation since personnel would lodge off-base.

Table 4.9-1. Estimated Water Consumption Associated with the Proposed Action

<i>Use Rate</i>	<i>U.S. Average (Gallons)</i>	<i>LEED Baseline (Gallons)</i>	<i>Fort Polk Capacity (Gallons)</i>
Per Person Per Day	11.5	6.7	-
Per Day (20 people)	230	134	-
Per Month	6,900	4,020	-
Gallons Per Year (180 days)	41,400	24,120	7,000,000
Proposed Action Percent Use Compared to Fort Polk Capacity	0.6	0.3	-

Notes: LEED - Leadership in Energy and Environmental Design
Source: Kohler, 2009

1 *Electrical Supply*

2 Minor increases in electrical use would occur through the operation of the Ground Control
3 System of the RPA training. Electrical capacity, which is configured to support the needs of
4 over 11,000 people would not be exceeded by the addition of the 15 persons associated with
5 RPA training. On base population is not at capacity, having decreased over 40 percent from
6 1975 to 2010 (U.S. Army, 2004; 2010b). Connection of the electrical systems to the proposed
7 concrete pads would be coordinated through the Department of Public Works.

8 *Natural Gas*

9 Minor increases in natural gas use would occur through the operation of the Ground Control
10 System of the RPA training. Natural gas capacity, which is configured to support the needs of
11 over 11,000 people, would not be exceeded by the addition of the 15 persons associated with
12 RPA training. No new natural gas connections are anticipated since the hangar at Fort Polk has
13 adequate utilities.

14 *Wastewater*

15 The current wastewater facilities would not be adversely affected by the activities associated
16 with additional TXANG. The existing infrastructure would be able to accommodate anticipated
17 usage and no new infrastructure would not be required.

18 *Stormwater Drainage Infrastructure*

19 The Proposed Action would utilize existing buildings and the existing airfield with minor if any
20 ground disturbing construction required installing the concrete pad. As a result, no new
21 stormwater drainage infrastructure is necessary. Any disturbance would be less than one acre
22 precluding the need for a stormwater general construction permit.

23 *Communications*

24 Existing communications infrastructure would not be adversely affected, though some upgrades
25 to communications in Buildings 4265 may occur.

26 ***Fort Hood***

27 *Water Supply*

28 The source of potable water for Fort Hood is Belton Lake which supplies all of the Killeen-Fort
29 Hood area with a capacity of 372,000 acre-feet out of a total volume of 887,000 acre-feet (Bell
30 County, 2010). An acre-foot is equal to one acre of land covered with one foot of water, or
31 325,850 gallons (Bell County, 2010). Thus, the potable water supply capacity available from
32 Belton Lake is 121 billion gallons (372,000 acre-feet times 325,850 gallons). Thus, while Fort
33 Hood is expected to reach capacity in terms of personnel in 2011, it is unlikely to exceed

capacity in terms of potable water use. The additional TXANG personnel at Fort Hood would not have an adverse effect on potable water use or supply.

Electrical Supply

The proposed hangar structure would need to be enclosed and electrical utilities added or upgraded. The TXANG would coordinate the expansion with Fort Hood civil engineering to ensure minimal interruption occurred to the host base mission. Significant impacts to electrical utilities are not anticipated.

Natural Gas

The Proposed Action would result in a minor increase in the use of natural gas, primarily to serve the new hangar. Natural gas use related to TXANG personnel would be negligible.

Wastewater

Proposed Action demand on sanitary sewer would not exceed current capacity. The increase in TXANG personnel would be small relative to the Fort Hood population. Approximately half of personnel associated with RPA training would lodge off-base, requiring only partial use of Fort Hood utilities.

Stormwater Drainage Infrastructure

Because sediment transport is an important issue on Fort Hood, concrete pad construction may require an evaluation of stormwater transport from Beacon Hill, and possible expansion of stormwater management infrastructure. The disturbance would be less than one acre precluding the need for a stormwater general construction permit. The TXANG would follow approved BMPs as listed in the Fort Hood Stormwater Management Plan.

Communications

Existing communications infrastructure would be extended to provide capability to the proposed hangar site and to the Beacon Hill concrete pad site. The TXANG would work with base civil engineering and other appropriate organizations to minimize interruptions in communications. Significant adverse impacts are not anticipated.

4.9.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

There are no environmental consequences associated with the Utilities resource area for Alternative 1 not previously discussed under the Proposed Action. As such, no adverse impacts would occur.

4.9.3 NO ACTION ALTERNATIVE

There would be no significant impact to utilities under the No Action Alternative. The TXANG would not conduct LRE training at Fort Hood or Fort Polk, and there would be no disturbance to land or existing structures to accommodate the RPA mission.

4.10 SOILS

Significance Criteria

Minimization of soil erosion and the siting of facilities in relation to potential soil limitations are considered when evaluating impacts to soils. If a proposed action were to substantially affect or be substantially affected by any of these features, impacts would be considered significant. Generally, impacts associated with soils can be avoided or minimized to a level of insignificance if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development.

Analysis of potential impacts to soils resulting from proposed activities examines the suitability of locations for proposed operations and activities. Impacts to soils can result from earth disturbance that would expose soil to wind or water erosion. Adverse impacts to soils and the associated potential impacts to water resources can be minimized through the implementation of BMPs such as those typically required to be in compliance with CWA.

Increases in impervious surfaces act to increase peak discharge volume and speed delivery of water to nearby waterways, which ultimately increases the potential for flooding as well as the transport of pollutants to surface waters. In undeveloped land, rainfall is collected and stored in vegetation, in the soil column, or in topographic depressions. Water is then utilized by plants and respired, or it moves slowly into groundwater and/or eventually to waterbodies where it slowly moves through the hydrologic cycle. Removal of vegetation and/or soil compaction decreases infiltration into the soil column and thereby increases the quantity and timing of runoff. Replacement of vegetation with an impervious surface, such as concrete, eliminates any potential for infiltration and also speeds up delivery of the water to nearby drainage channels.

4.10.1 PROPOSED ACTION (PREFERRED ALTERNATIVE)

Fort Hood

Implementation of the Preferred Alternative would result in an estimated maximum new impervious surface area of 15 acres. The Denton silty clay soils maintain a high potential for wind erosion, which would necessitate the use of BMPs during soil disturbance activities. While the majority of the proposed project would occur on relatively flat terrain, trenching operations would occur along the steeper terrain of the hill in soils subject to high water erosion. Use of

appropriate BMPs (such as silt fences, straw bale dikes, diversion ditches, riprap channels, or water spreaders) would be implemented to reduce soil erosion and sedimentation.

Due to the construction suitability of the soil identified in Section 3.10, additional design elements may be necessary to construct a solid foundation for the proposed structure; erosion potential of soils will be used in designs to minimize direct and cumulative erosion and sedimentation issues. Design reviews will ensure this protection measure is observed. Increased potential for erosion and sedimentation due to grading, removal of vegetation, and exposure of soil during construction is considered to have short-term, minor adverse effects. These impacts would be minimized by the appropriate use of BMPs for controlling runoff, erosion, and sedimentation. In accordance with the CWA, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared, reviewed, and approved prior to the start of construction.

Since construction activities would disturb greater than five acres of land, a Stormwater General Permit and development of an SWPPP would be required to meet requirements of the Texas Pollutant Discharge Elimination System (TPDES). Erosion and sediment controls would be required and would be in place during construction to reduce and control erosion impacts to areas outside of the construction site. On December 1, 2009, the USEPA published effluent limitations guidelines (ELG) and new source performance standards to control the discharge of pollutants from construction sites. The regulation was effective February 1, 2010 and after this date, all permits issued by EPA or states must incorporate the final rule requirements. The TPDES Small Municipal Separate Storm Sewer Systems (MS4) General Permit TX040000 includes an optional 7th minimum control measure for the permitted MS4 operator to include all of the municipal construction activities for which is a regulated operator into its MS4 authorization (TCEQ, 2011). According to the ELG, all construction sites currently required to obtain permit coverage must implement a range of erosion and sediment controls and pollution prevention measures. Effective February 2, 2014, new effluent limitations for turbidity would apply to all construction sites disturbing 10 or more acres of land at one time.

Fort Hood has a Stormwater Management Plan (SWMP) to comply with the requirements of the TPDES General Permit No. TXR040000 for Small MS4. Fort Hood's Spill Prevention, Control, and Countermeasure Plan and Installation Spill Contingency Plan address the prevention of unintentional pollutant discharges from the bulk storage and handling of petroleum products and other hazardous materials. Additional information is presented in Section 3.4 Hazardous Materials and Waste.

Because the Proposed Action would include a construction footprint of greater than 5,000 square feet, the design requirements of *UFC 3-21-10* would also need to be implemented. These requirements include the implementation of stormwater management strategy designed to

maintain site hydrology and mitigate the adverse impacts of stormwater runoff and nonpoint source pollution. Methodologies such as bio-retention areas, permeable pavements, cisterns/recycling, or green roofs would be utilized in the project design.

4.10.2 ALTERNATIVE 1, MQ-1 OPERATIONS AT FORT HOOD

Infrastructure elements under the Alternative Action are the same as under the Preferred Alternative and therefore, potential impacts to soils are the same as discussed in Section 4.2.1.

4.10.3 NO ACTION ALTERNATIVE

No impacts to water resources at Fort Hood or Fort Polk would occur from the No Action Alternative since no new construction or other activities would take place.

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5.0 CUMULATIVE IMPACTS

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the ROI. Cumulative impacts can result from individually minor, but collectively substantial actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, or anticipated over the foreseeable future, is required.

5.1 PAST, PRESENT AND REASONABLY FORESEEABLE ACTIONS IN THE ROI

Fort Hood and Fort Polk update facilities on a continual basis, as necessary. While it is not practical to catalog all minor projects that could occur over the short-term, a list of the major projects in the ROI has been analyzed for the potential to create cumulative environmental impacts. Short- and long-term planning efforts at Fort Hood and Fort Polk include the actions described below. These projects would be subject to separate environmental review as applicable.

Fort Hood

- Construction of a UAS Complex comprising two UAS hangars located east of the RGAA and totaling approximately 20 acres (scheduled for FY2011 and 2012);
- Construction of a Tactical Equipment Maintenance Facility (TEMF) and Company Operations Facility at West Fort Hood, a TEMF (motor pool) to the east of the RGAA, and a Company Operations Facility to the northwest of RGAA in the West Fort Hood "cantonment" area totaling about 30 acres (FY2011 to 2012); and,
- Construction of a second runway and Assault Landing Strip (ALS) south of the RGAA at West Fort Hood. The ALS would be a small tactical landing strip. The EA for the ALS is complete, while the Environmental Impact Statement for the second runway is scheduled to be completed in 2011, although it is unknown at this time when construction would begin on these projects (Alexander, 2010).

Fort Polk

- Construction of a 410th Mountain Brigade Headquarters, three Company Operations Facilities, a Vehicle Maintenance Facility, a Militarily Working Dog Facility, two Child Development Centers, a Warrior Transitional Units Barrack and Headquarters, a 250-room enlisted personnel barracks, a North Fort Mini-Mall, and a multipurpose machine gun range (FY2010 to 2011);

- Construction of a Fire and Emergency Center, a 1st Maneuver Enhancement Brigade Headquarters and Company Operations Facility, a commissary, and a multi-purpose machine gun range (FY2012); and,
- Construction of two enlisted personnel barracks (FY2015) (Goins, 2010).

The Proposed Action involves only the construction of a small concrete pad at the selected installation; therefore, cumulative impacts from construction activities associated with the Proposed Action combined with other past, present, or reasonably foreseeable future actions would not be significant.

Additionally, installation personnel confirm that the tempo of flight operations at each installation is not anticipated to significantly change in the next few years from those of present-day. Training activities described in the Proposed Action would have no significant cumulative impacts on the availability of airspace or other training-related resources at these installations (Garner, 2010).

6.0 SPECIAL OPERATING PROCEDURES

This section summarizes special operating procedures associated with this EA. “Special operating procedures” are defined as measures that would be implemented to address minor potential environmental impacts associated with implementation of the Proposed Action.

6.1 SPECIAL OPERATING PROCEDURES

The following special operating procedures would be implemented as part of the Proposed Action:

Airspace

COAs would be required at Fort Hood and Fort Polk for the operation of the Predator RPA prior to initiation of any Predator aircraft flying operations. It is anticipated that these COAs would be similar to existing COAs at the two installations which regulate the flying operations of other types of RPAs.

Biological Resources

The Proposed Action at Fort Hood would require line-of-sight at both ends of the runway, necessitating trimming the tops of trees. Trimming would be limited to only small branches and would not include sections of the tree trunks. Trimming for line-of-sight would not count as a take under the new Biological Opinion; however, this activity must be done outside of the nesting season.

If migratory birds are found in the proposed project location, appropriate measures would be taken to ensure that compliance with the Migratory Bird Treaty Act is met, such as limiting construction activities to periods of time when migratory birds are not nesting, halting excavation when or if birds are found, and creating buffer zones around the nests.

Cultural Resources

The TXANG would report inadvertent discoveries of cultural resources during construction activities to Fort Hood and Fort Polk cultural resources personnel, as appropriate.

Soils

Because the Proposed Action would include a construction footprint of greater than 5,000 square feet, the design requirements of *UFC 3-21-10* would need to be implemented. Methodologies such as bio-retention areas, permeable pavements, cisterns/recycling, or green roofs would be utilized in the project design.

6.2 MITIGATIONS

No mitigation measures will be necessary to reduce any adverse environmental impacts to below significant levels.

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**APPENDIX A
INTERAGENCY AND INTERGOVERNMENTAL
COORDINATION FOR ENVIRONMENTAL
PLANNING**

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1

SAMPLE IICEP COORDINATION LETTER



NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

7 April 2011

U.S. Department of Transportation
Federal Aviation Administration, Southwest Region
Airports Division
2601 Meacham Boulevard
Fort Worth, TX 76137-4298

Dear Sir or Madam

The National Guard Bureau (NGB) has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for the Texas Air National Guard's (TXANG) 147th Reconnaissance Wing (147 RW). The purpose of the Proposed Action is to provide the TXANG personnel with the training facilities and airspace necessary to effectively perform their Remotely Piloted Aircraft mission. The draft EA and draft FONSI are provided for your review and comment (see Attachment).

The environmental analysis for the Proposed Action is being conducted by the NGB in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached draft EA, and solicit your comments concerning the proposal and any potential environmental consequences of the action. We also request information regarding other recently completed, on-going, or proposed projects in the vicinity that create cumulative impacts in association with the Proposed Action. Please provide any comments you may have within 30 days of receipt of this letter. Further, if upon completion of the environmental impact analysis process it is determined that a FONSI is appropriate, a FONSI will be signed. Please indicate in writing if you wish to receive the final EA and/or signed FONSI.

Please forward your written comments to me, Robert L. Dogan at NGB/A7AM, Shepperd Hall, 3501 Fetchet Avenue, JB Andrews MD 20762-5157 or email to Robert.Dogan@ang.af.mil. Thank you for your assistance.

Sincerely

A handwritten signature in cursive script, reading "R. L. Dogan", is positioned above the typed name.

ROBERT L. DOGAN, GS-13, REM
Plans and Requirements Branch

Attachment:

Draft EA for Proposed Operation (Launch and Recovery Element) of MQ-1 Predator and MQ-9 Reaper Aircraft at Fort Polk, Louisiana, and Fort Hood, Texas, with Draft FONSI

2

IICEP COORDINATION LIST

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(214) 665-6444

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(337) 291-3100

U.S. Army Corps of Engineers
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Louisiana State Historic Preservation Officer
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Louisiana Department of Wildlife and Fisheries
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Louisiana Department of Environmental Quality
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3 Austin, TX 78753
4
5 Texas Commission on Environmental Quality, Region 9
6 Attn: Anna Dunbar, Regional Director
7 6801 Sanger Avenue, Ste., 2500
8 Waco, TX 76710-7826
9 (254) 751-0335

10 Texas Historical Commission
11 Attn: Mark Wolfe, SHPO
12 108 W. 16th Street
13 Austin, TX 78711
14 (512) 463-6100

15 U.S. Army Corps of Engineers
16 Fort Worth District
17 Attn: Bobby Shelton (CESWF-PER-EE)
18 P.O. Box 17300
19 Fort Worth, TX 76102
20 (817) 886-1711

21 U.S. Fish and Wildlife Service, Region 2
22 Attn: Dr. Benjamin Tuggle, Regional Director
23 500 Gold Avenue SW.
24 Albuquerque, NM 87102
25 (505) 248-6911

26 U.S. Fish and Wildlife Service
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36

Native American Indian Tribes

- 1
- 2 Earl J. Barby, Sr., Chairperson
- 3 Tunica-Biloxi Indian Tribe of Louisiana
- 4 151 Melacon Drive
- 5 Marksville, LA 71351
- 6 (318) 253-9767
- 7 Chief Oscola Clayton Sylestine
- 8 Alabama-Coushatta Tribe of Texas
- 9 571 State Park Road
- 10 Livingston, TX 77351
- 11 (936) 563-1100
- 12 John W. Procell, Chairman
- 13 Choctaw-Apache Tribe of Ebarb
- 14 35 Lonnie Road
- 15 Zwolle, LA 71486
- 16 Thomas Dardar, Jr., Chairperson
- 17 United Houma Nation
- 18 20986 Hwy. 1
- 19 Golden Meadow, LA 70357
- 20 (985) 475-6640
- 21 Rufus Davis, Jr., Chairman
- 22 Adai Indians of Louisiana
- 23 Route 2, Box 246
- 24 Robeline, LA 71469
- 25 (318) 472-8680
- 26 John Paul Darden, Chairman
- 27 Chitimacha Tribe
- 28 155 Chitimacha Loop
- 29 Charenton, LA 70523
- 30 (337) 923-4673

- 1 Kevin Sickey, Chairperson
- 2 Coushatta Tribe
- 3 3602 Powell Road
- 4 Elton, LA 70532
- 5 (337) 584-2733

- 6 The Honorable Christine Norris, Chairperson
- 7 Jena Band of Choctaw
- 8 P.O. Box 14
- 9 Jena, LA 71342
- 10 (316) 992-2717

- 11 Buford Rolin, Chairperson
- 12 Poarch Band of Creek Indians
- 13 5811 Jack Springs Road
- 14 Atmore, AL 36502
- 15 (251) 368-9136

- 16 Chairman, Clifton Choctaw
- 17 1146 Clifton Road
- 18 Clifton, LA 71447
- 19 (318) 793-4253

- 20 Jackie M. Womack, Chairperson
- 21 Four-Winds Cherokee
- 22 P.O. Box 395
- 23 New Llano, LA 71461
- 24 (337) 537-1697

- 25 Rebecca Torres, Chief
- 26 Alabama-Quassarte Tribal Town of the Creek Nation of Oklahoma
- 27 P.O. Box 537
- 28 Henryetta, OK 74437
- 29 (918) 652-8708

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ACRONYMS AND ABBREVIATIONS, CONT'D

1		
2	TCEQ	Texas Commission on Environmental Quality
3	TEMF	Tactical Equipment Maintenance Facility
4	TMDL	Total Maximum Daily Load
5	TPDES	Texas Pollutant Discharge Elimination System
6	tpy	Tons per Year
7	TXANG	Texas Air National Guard
8	U.S.	United States
9	UAS	Unmanned Aerial System
10	UFC	United Facilities Criteria
11	USAF	United States Air Force
12	USC	United States Code
13	USEPA	U.S. Environmental Protection Agency
14	VFR	Visual Flight Rule
15	VOC	Volatile Organic Compound
16	VR	Visual Flight Rule Military Training Routes

